Chapter 14: TRANSPORTATION

14.1 Introduction

This chapter describes the transportation characteristics and potential impacts associated with the Proposed Project. The Project Site comprises a 7.2-acre portion of Block 4833, Lot 1 on the west side of the existing Kingsboro Psychiatric Center ("KPC") campus bounded by Winthrop Street to the north, Clarkson Avenue to the south, Albany Avenue to the west, and a metal perimeter fence to the east which separates the site from the remainder of the KPC campus (see Figure 14-1, "Project Site").

As described in Chapter 1, "Project Description," the Proposed Project would provide approximately 1,090 residential dwelling units ("DU"), of which 337 units would be dedicated for seniors (age-restricted housing). A total of 326 units, not inclusive of the age-restricted units, would be supportive housing for residents including those with intellectual and developmental disabilities and behavioral health issues (severe mental illness), the frail and elderly, youth aging out of foster care, residents who have been formerly incarcerated, and military service members with disabilities. The remaining 427 residential units would be affordable units with resident incomes ranging between 40 and 80 percent of the Area Median Income ("AMI").

In addition, there would be approximately 8,092 gross square feet ("gsf") of commercial space and approximately 63,071 gsf of community facility space, including 5,000 gsf of day care space (see Table 14-1, "Proposed Project Incremental Land Uses").[1] The commercial space would be a neighborhood-oriented grocery store. The community facility space would include a ballet studio, emergency food service center, and Service Employees International Union ("SEIU") facility, which would include a day care element. A total of 2.8 acres of open space would be provided, including 0.64-acre private gardens that would be restricted to development residents and 2.16 acres of publicly accessible open space. Construction of the Proposed Project would begin in 2024 and would be expected to be completed and occupied by 2031.

The Project Site currently consists of two homeless shelters that would be rebuilt and relocated on the Project Site to fully replace the existing 364 beds currently available. The existing shelter facilities operating on the Project Site would remain in operation with 364 shelter beds available in the No Action condition if the Proposed Project were not built; therefore, these two shelters are not considered new

[1] In Chapter 1, "Project Description," the Proposed Project is stated to include the development of 63,071 sf of community facility space. It is anticipated that 5,000 sf within the SEIU facility would be used for day care facilities. For the purposes of Transportation analyses, day care facilities are treated as a separate use.

incremental land uses and are not included in the summary of Proposed Project incremental land uses in Table 14-1.

Table 14-1 - Proposed Project Incremental Land Uses

Land Use	With Action Condition[1]	
Residential		
General Affordable Housing (Not Supportive or Age-Restricted)	427	DU
Senior Housing	337	DU
Supportive Housing	326	DU
Total Residential	1,090	***DU***
Commercial		
Grocery Store	8,092	sf
Total Commercial	8,092	***sf***
Community Facility		
Community Facility Space	58,071	sf
Day Care	5,000	sf
Total Community Facility	63,071	***Sf***
Open Space		
Private Gardens for Development Residents	0.64	acres
Publicly Accessible	2.16	acres
Total Open Space	2.80	***acres***

1. For trip generation purposes, supportive housing units for behavioral health disabilities and chronically homeless are considered supportive units, but supportive units for young adults and youths aging out of foster care are considered as regular affordable housing units. Of the 326 supportive housing units shown in the chart above, 51 units would be reserved for young adults and youths aging out of foster care. Consequently, for transportation analysis purposes, the affordable and supportive housing unit counts in the chart above are adjusted to 478 (427 + 51) affordable housing units and 275 (326 – 51) supportive housing units. Also, the Proposed Project includes the full replacement of an existing 364-bed homeless shelter, which is not included in this table because it would continue to operate in the No Action condition.

Source: STV Incorporated, 2023; Douglaston Development, 2023.

Project Site

Source: STV Incorporated, 2023

N

0 0.25 0.5 Miles

Figure - 14 - 1
Project Site

Kingsboro Psychiatric Center Redevelopment Project

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14.2 Principal Conclusions

TRAFFIC

Traffic conditions are evaluated for the weekday AM, midday, PM, and Saturday midday peak hours at nine intersections in the traffic study area where additional traffic resulting from the Proposed Project would be most heavily concentrated. As summarized in Table 14-12, "2031 With Action Conditions," the traffic impact analysis indicates the potential for significant adverse impacts at the following seven intersections during one or more analyzed peak hours.

- Clarkson Avenue and Utica Avenue
- Clarkson Avenue and Albany Avenue
- Clarkson Avenue and New York Avenue
- Winthrop Street and Utica Avenue
- Winthrop Street and Troy Avenue
- Winthrop Street and Albany Avenue
- Clarkson Avenue and East 43rd Street

Chapter 23, "Mitigation Measures," identifies measures that could mitigate these significant adverse impacts.[2]

TRANSIT

Bus

The study area is served by a total of four local bus routes operated by the Metropolitan Transportation Authority ("MTA"): the B12, B44, B46, and B35. The Proposed Project is projected to generate a total of approximately 429, 231, 421, and 374 incremental bus trips on these routes during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. The new demand from the Proposed Project would exceed the 50-trip New York *City Environmental Quality Review ("CEQR") Technical Manual* analysis threshold along the B12 bus route only.

[2] Mitigation measures identified through the New York State Environmental Quality Review Act ("SEQRA") process, as well as other project commitments relating to the potential environmental impacts of the Proposed Project, may be implemented and enforced by Empire State Development ("ESD") through various mechanisms (the "ESD Environmental Controls"), including the Restrictive Declaration, General Project Plan ("GPP"), and Design Guidelines.

The Proposed Project would result in a capacity shortfall for the B12 bus routes during the weekday AM peak hour for the eastbound route. As a result, the B12 bus route would experience a significant adverse impact based on *CEQR Technical Manual* criteria. As discussed in Chapter 23, "Mitigation Measures," the significant adverse impact to these bus services could be mitigated by increasing the number of buses in the peak hours.

Subway

Subway Stations

The subway station analysis focuses on the Winthrop Street (2/5) Station, where incremental demand from the Proposed Project would exceed the 200-trip *CEQR Technical Manual* analysis threshold during AM and PM weekday peak hours. The Proposed Project is projected to generate a net increment of approximately 400, 214, 386, and 349 subway trips during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. The highest number of peak hour subway trips are expected to occur at the Winthrop Street Station on the 2 and 5 lines, which is projected to experience approximately 243 incremental trips (in and out combined) in the weekday AM peak hour, 235 trips in the weekday PM peak hour, and 212 trips in the Saturday midday peak hour.

The results of the subway analysis identify that the station fare control areas are projected to operate at an acceptable Level of Service ("LOS") A during the weekday AM, PM, and Saturday midday peak hours. The Winthrop Street Station street stairs at the Winthrop Street entrance and at the Parkside Avenue entrance would deteriorate within LOS D conditions during the weekday AM peak hour and during the PM peak hour for the Parkside Avenue stair entrance. This change would not exceed MTA New York City Transit's ("NYCT") significant adverse impact thresholds; therefore, no significant adverse impacts to the Winthrop Street Station are anticipated based on *CEQR Technical Manual* criteria.

Subway Line Haul

Line haul is the volume of transit riders passing a defined point on a given transit route. Line haul is typically measured in the peak direction at the point where the trains carry the greatest number of passengers during the peak hour (the maximum load point) on each subway route. The Project area is served by four NYCT subway routes: the 2, 5, B, and Q lines. The Proposed Project is expected to generate 200 or more new subway trips during the peak hours on the 2 and 5 lines. For the 2 and 5 lines, the line haul is measured at the actual maximum load point leaving the station (the point where the trains carry the greatest number of passengers during the peak hour), which is typically downtown Brooklyn or Manhattan. The peak direction of travel is northbound (Manhattan-bound) during the AM peak hour and southbound (Brooklyn-bound) during the PM peak hour.

The results of the analysis show that both lines would continue to operate below the guideline capacity in the peak direction at the maximum load point during the weekday AM, PM, and Saturday midday peak hours; therefore, significant adverse impacts to subway line haul conditions are not anticipated based on *CEQR Technical Manual* criteria.

PEDESTRIANS

The Proposed Project is expected to generate a net total of approximately 181 walk-only trips in the weekday AM peak hour, 177 in the midday peak hour, 259 in the PM peak hour, and 293 in the Saturday midday peak hour. Persons en route to and from bus stops are projected to add approximately 155, 85, 157, and 135 additional pedestrian trips to area sidewalks and crosswalks during these same periods, respectively. Also, persons en route to and from subway stations would add approximately 400, 214, 386, and 349 pedestrian trips to area sidewalks and crosswalks during these same periods, respectively.

It is expected that during the AM and PM peak periods, pedestrian trips attributable to the Proposed Project would be concentrated on sidewalks and crosswalks adjacent to the Project Site and along routes to and from the bus stops and subway stations. During the weekday midday and Saturday midday periods, pedestrian trips would be expected to be dispersed, as people travel throughout the area for restaurants, shopping, or errands at the commercial land uses located adjacent to the Proposed Project.

The pedestrian trip distribution patterns were estimated using the New York City MapPLUTO data for the residential unit density within a quarter-mile distance from the proposed redevelopment. Walking trips to/from the bus stops and/or subway stations in the vicinity of the Project Site are included in the pedestrian trip assignments.

The weekday AM, midday, PM, and Saturday midday peak hour pedestrian conditions were evaluated at a total of nine representative pedestrian elements where new trips generated by the Proposed Project are expected to be most concentrated. These elements are primarily located at connections from the Project Site to local bus stops and subway stations. The pedestrian analysis indicates that all of the pedestrian elements in the Project study area would operate at acceptable LOS B conditions or better during the weekday AM, midday, and PM, and Saturday midday peak analysis hours; therefore, significant adverse impacts to pedestrian operations are not anticipated based on *CEQR Technical Manual* criteria.

VEHICLE AND PEDESTRIAN SAFETY

The City's Vision Zero initiative seeks to eliminate all deaths from traffic crashes, regardless of whether on foot, bicycle, or inside a motor vehicle. In this effort, the New York City Department of Transportation ("NYCDOT") and New York City Police Department ("NYPD") developed a set of five plans, each of which analyzes the unique conditions of one New York City borough and recommends actions to address the borough's specific challenges to pedestrian safety. These plans pinpoint the conditions and characteristics

of pedestrian fatalities and severe injuries; they also identify priority corridors, intersections, and areas that disproportionately account for pedestrian fatalities and severe injuries, prioritizing them for safety interventions. The plans outline a series of recommended actions comprised of engineering, enforcement, and education measures that intend to alter the physical and behavioral conditions on City streets that can lead to pedestrian fatality and injury. The Project study area does not include any NYCDOT Vision Zero priority intersections; however, the Project study area includes Utica Avenue, Troy Avenue, and Schenectady Avenue north of Winthrop Street, and Linden Boulevard, which are Brooklyn priority corridors.

Crash data for intersections within a quarter-mile of the Proposed Project, as well as the intersections within the traffic study area, were obtained from NYCDOT for the three-year period between January 1, 2017, and December 31, 2019. The data quantifies the total number of crashes involving injuries to pedestrians or bicyclists. During the three-year reporting period, a total of 236 crashes occurred, of which 63 were pedestrian-related crashes and 15 were bicycle-related crashes. A high-crash location is defined by the *CEQR Technical Manual* as a location with five or more pedestrian/bicyclist injury crashes in any consecutive 12 months of the most recent three-year period for which data is available. In addition, a high-crash location is any location along a Vision Zero Priority Corridor with three or more pedestrian/bicyclist injury crashes in any consecutive 12 months of the most recent three-year period for which data is available. Five intersections in the Project study area would be considered high-crash intersections and include the four Albany Avenue intersections at Rutland Road, Winthrop Street, Clarkson Avenue and Linden Boulevard as well as the intersection of Clarkson Avenue at East 37th Street.

PARKING

The parking analysis projects changes in the parking supply and utilization within a quarter-mile radius of the Project Site under both No Action and With Action conditions. Based on existing curbside parking regulations and taking into account curb space obstructed by curb cuts, fire hydrants, and other impediments, there are approximately 1,850 legal on-street parking spaces within a reasonable walking distance of the Project Site when no alternate-side regulations are in effect and about 1,375 spaces when street-cleaning regulations are in effect. Several streets within the Project Study Area are regulated by alternate-side street-cleaning parking regulations during the weekday midday period between 11 AM and 1 PM. This supply for on-street parking spaces has an available capacity of 234 spaces during the weekday AM period (without regulations), 147 spaces during the weekday midday period (with regulations), and 364 spaces during the Saturday midday period (without regulations).

The Proposed Project is estimated to provide a total of 15 on-street parking spaces on the new privately owned driveway extending from East 43rd Street for staff and visitors of the community facility uses. All other residents, workers, and shoppers accessing the Proposed Project by private vehicle are anticipated to use available on-street parking.

Overall, the Proposed Project is projected to generate an on-street parking demand of 244, 194, and 190 parking spaces during the weekday AM, midday, and Saturday midday peak periods, respectively. This on-street parking demand would result in a parking shortfall of 110 spaces during the weekday AM period and 99 spaces during the weekday midday period. Given that the parking demand exceeds the available on-street parking supply, the Proposed Project would result in a significant parking shortfall.

14.3 Preliminary Analysis Methodology

The *CEQR Technical Manual* describes a two-level screening procedure for the preparation of a "preliminary analysis" to determine if quantified operational analyses of transportation conditions are warranted. As discussed in the following sections, the preliminary analysis begins with a trip generation (Level 1) analysis to estimate the numbers of trips attributable to the Proposed Actions by mode. According to the *CEQR Technical Manual*, if the Proposed Project is expected to result in fewer than 50 peak hour vehicle trips and fewer than 200 peak hour transit or pedestrian trips, further quantified analyses are not warranted. When these thresholds are exceeded, detailed trip assignments (Level 2) are performed to estimate the incremental trips that could be incurred at specific transportation elements and to identify potential locations for further analyses. If the trip assignments show that the Proposed Project would generate 50 or more peak hour vehicle trips at an intersection, 200 or more peak hour subway trips at a station, 50 or more peak hour bus trips in one direction along a bus route, or 200 or more peak hour pedestrian trips traversing a sidewalk, corner area, or crosswalk, then further quantified operational analyses may be warranted to assess the potential impacts on traffic, transit, pedestrians, parking, and vehicular and pedestrian safety.

14.4 Level 1 Screening Assessment

BACKGROUND

A Level 1 trip generation screening assessment is conducted to estimate the numbers of person and vehicle trips by mode expected to be generated by the Proposed Project during the weekday AM, midday, PM, and Saturday midday peak hours. These estimates are then compared to the *CEQR Technical Manual* analysis thresholds to determine if a Level 2 screening and/or quantified operational analyses may be warranted. The travel demand assumptions used for the assessment are described in the following sections along with a summary of the travel demand that would be generated by the Proposed Project; a detailed travel demand forecast is then provided.

TRANSPORTATION PLANNING FACTORS

The preliminary transportation planning factors proposed for use in forecasting travel demand for the Proposed Project (expressed as land uses) are summarized in Table 14-2, "Transportation Planning Factors," and discussed below. The trip generation rates, temporal distributions, modal splits, vehicle occupancies, and truck trip factors for each of the land uses were based on those cited in the *CEQR Technical Manual*, 2015-2019 American Community Survey ("ACS") Census data, 2012-2016 Census Transportation Planning Products, or recent NYCDOT trip generation survey data. Also, factors developed for a few studies including the *East New York Rezoning Environmental Impact Statement ("EIS") (2015) and Brooklyn Developmental Center Mixed-Use Project FEIS (2021)* were utilized to obtain the trip generation rates, temporal distributions, modal splits, vehicle occupancies, and truck trip factors for certain land uses. Factors are shown for the weekday AM and PM peak hours (typical peak periods for commuter travel demand) and the weekday and Saturday midday (typical peak periods for retail demand). These transportation planning factors were developed in consultation with NYCDOT during preparation of the Transportation Planning Factors technical memorandum, which is provided in Appendix G.

Table 14-2: Transportation Planning Factors

Land Use	Supportive Housing (8)	Residential (Affordable- 3 or	Senior Housing	Day Care (Children)	Day Care (Parents)	Day Care (Staff)	Grocery Store	Community Center	Passive Park	Office (SEIU)
Size/Units	275 DU	478 DU	337 DU	5,000 sf	5,000 sf	5,000 sf	8,092 sf	16,994 sf	2.16 acres	16,384 sf
			(7)							
Trip Generation	(5)	(1)	(1)	(1)	(1)	(1)	(1)	(9)	(1)	(1)
Weekday	3.70	8.18	8.18	22	44	6	256	51.6	44	18
Saturday	3.70	9.08	9.08	0	0	0	300	50.4	62	3.9
	per DU	per DU	per DU	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1 acre	per 1,000 sf
Temporal Distribution	(5)	(1)	(1)	(1)	(1)	(1)	(1)	(9)	(1)	(1)
AM	13.0%	9.3%	9.3%	25.0%	25.0%	25.0%	4.0%	9.0%	3.0%	12.4%
MD	4.0%	5.6%	5.6%	0.0%	0.0%	2.5%	7.0%	7.4%	14.0%	11.0%
PM	16.0%	8.5%	8.5%	25.0%	25.0%	25.0%	10.6%	9.0%	14.0%	10.5%
Sat MD	10.0%	8.4%	8.4%	0.0%	0.0%	0.0%	9.5%	12.6%	16.0%	14.1%
Modal Splits	(3)	(4)	(4)	(4)	(4)	(3)	(6)	(2)	(11)	(3)
Auto	49.0%	24.8%	24.8%	24.8%	24.8%	49.0%	39.0% 39.0%	11.0%	0.0%	49.0%
Taxi	1.0%	0.6%	0.6%	0.6%	0.6%	1.0%	0.0% 0.0%	0.0%	0.0%	1.0%
Subway	24.0%	50.0%	50.0%	50.0%	50.0%	24.0%	5.0% 2.0%	3.0%	0.0%	24.0%
Bus	16.0%	17.2%	17.2%	17.2%	17.2%	16.0%	5.0% 2.0%	2.0%	0.0%	16.0%
Walk/Other	10.0%	7.3%	7.3%	7.3%	7.3%	10.0%	51.0% 57.0%	84.0%	100.0%	10.0%
	(5)	(1)	(5)	(1)	(1)	(1)	(1)	(2)	(11)	(1)
In/Out Splits	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out
AM	74% 26%	22% 78%	47% 53%	100% 0%	50% 50%	100% 0%	51% 49%	61% 39%	50% 50%	89% 11%
MD	55% 45%	50% 50%	50% 50%	0% 0%	0% 0%	50% 50%	51% 49%	55% 45%	50% 50%	48% 52%
PM	19% 81%	63% 37%	53% 47%	0% 100%	50% 50%	0% 100%	50% 50%	29% 71%	50% 50%	17% 83%
Sat MD	38% 62%	51% 49%	62% 38%	0% 0%	0% 0%	0% 0%	50% 50%	49% 51%	50% 50%	50% 50%
	(5)	(4 & 2)	(4 & 2)	(2)	(2)	(3)	(2)	(2)	(11)	(3)
Vehicle Occupancy		AM/PM MD/Sat	AM/PM MD/Sat							
Auto	1.24	1.24 1.49	1.24 1.49	1.00	n/a	1.07	1.65	1.65	2	1.07
Taxi	1.41	1.24 1.30	1.24 1.30	1.00	n/a	1.07	1.40	1.30	2.00	1.07
Truck Trip Generation	(5)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(11)	(1)
Weekday	0.07	0.06	0.06	0.03	0.00	0.00	0.35	0.29	0.00	0.32
Saturday	0.07	0.02	0.02	0.03	0.00	0.00	0.04	0.29	0.00	0.01
Temporal Distribution	(5)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(11)	(1)
AM	17.0%	12.0%	12.0%	9.6%	0.0%	0.0%	10.0%	9.6%	0.0%	10.0%
MD	13.0%	9.0%	9.0%	11.0%	0.0%	0.0%	8.0%	11.0%	0.0%	11.0%
PM	0.0%	2.0%	2.0%	1.0%	0.0%	0.0%	5.0%	1.0%	0.0%	2.0%
Sat MD	0.0%	9.0%	9.0%	0.0%	0.0%	0.0%	10.0%	0.0%	0.0%	11.0%
Truck In/Out Splits	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out
AM/MD/PM/Sat	50% 50%	50% 50%	50% 50%	50% 50%	50% 50%	50% 50%	50% 50%	50% 50%	50% 50%	50% 50%

(1) Based on data from the *City Environmental Quality Review (CEQR) Technical Manual* , 2021.
(2) Based on data from *East New York Rezoning Proposal FEIS* , 2015.
(3) Based on *2012-2016 Census Transportation Planning Products (CTPP) 5-Year* "Workplace" Estimates for tract numbers 808, 810, 814, 816, 870, 872, 874.01, 876 and 878
(4) Based on *2015-2019 American Community Survey (ACS)* data for tract numbers 808, 810, 814, 816, 870, 872, 874.01, 876 and 878
(5) Based on *Brooklyn Developmental Center Mixed-Use Project FEIS,* 2021
(6) Based on NYCDOT survey data.
(7) Senior Housing transportation planning factors was assumed to be same as the residential units (3 or more floors).
(8) For trip-generating purposes, only the units (275 of 326) dedicated to behavioral health disabilities and the chronically homeless have been classified as "Supportive Housing" units. The remaining 51 units for youth aging out of foster care and young adults (18-25 age) have been classifed as "Residential" units.
(9) Based on NYCDOT recommended data.
(10) The two existing homeless shelters will be relocated (rebuilt) from west to east side of the proposed site to fully replace the existing 364 beds currently available. No additional trips will be generated. All vehicular and pedestrian trips will be shifted from west to east side of the site.
(11) Based *Saint Vincents Campus Redevelopment FEIS* , 2012

Source: STV Incorporated, 2023.

Residential

The residential person trip and truck trip generation rates and temporal distributions reflect those cited in the *CEQR Technical Manual* and survey data provided by NYCDOT. Modal split and vehicle occupancies were based on the 2015-2019 ACS data for census tracts that include and surround the Project Site (Kings County Census Tracts 808, 810, 814, 816, 870, 872, 874.01, 876, and 878).

It is noted that ACS vehicle occupancy data reflects the average vehicle occupancy for personal auto trips to and from work and therefore does not present the complete picture of average vehicle occupancy for other purposes (e.g., shopping, errands, social and recreational activities, school trips, etc.). In general, vehicle occupancy rates for non-work-related trips have been found to be higher than vehicle occupancy rates for work-related trips. While not all AM and PM peak hour trips are work-related, the lower vehicle occupancy rates for trips to and from work are conservatively applied to all auto trips in these peak travel hours.

Residential-based trips in the weekday midday and Saturday peak hours would more likely be local, compared to non-local trips made during the commuter peak hours (local trips would be expected to have a higher walk share, for example). However, modal splits based on the Census data are conservatively assumed for all periods. The residential units dedicated for young adults (ages 18 to 25) and for youth aging out of foster care are included in the residential unit total for trip generation purposes.

Senior Housing

The senior housing person trip generation rates were conservatively assumed to have the same trip generation characteristics as the residential land use as per discussions with NYCDOT. The in and out splits for the senior housing land use would be slightly different than for the residential land use. This is consistent with the analyses that were performed in ESD's Final Environmental Impact Statement ("FEIS") for the *Brooklyn Developmental Center Mixed-Use Project (2021).*[3]

Supportive Housing

The residential units (275 dwelling units) dedicated to those individuals with behavioral health (BH) disabilities and the chronically homeless have been considered supportive housing for trip generation purposes. Residents of the supportive housing facilities are not anticipated to own a personal vehicle. The trips associated with this land use are anticipated to primarily be work trips generated by the staff that support these residents. The trip generation rates for supportive housing were assumed to be most

[3] A trip generation survey was performed at a residential senior housing building located at 1505 St. Marks Avenue in Brooklyn. The trip generation data collected indicates that the peak hour trip generation rates for the 1505 St. Marks Avenue senior housing facility are approximately 35 to 80 percent of the rates that were estimated for senior housing in Table 14-2: "Transportation Planning Factors"; therefore, the rates used for this transportation analysis are conservative.

similar to those for an assisted living facility, whereby person trips are predominantly associated with the staff working on site. The supportive housing person trip and truck trip generation rates, vehicle occupancy rates, temporal distributions, and in/out splits are based on the *Brooklyn Developmental Center Mixed-Use Project FEIS (2021)*, which were based on a survey performed on an assisted living facility in Manhattan for the *Jewish Lifecare EIS* and the *Hebrew Home for the Aged Expansion EAS (2018)*. Census Transportation Planning Package (CTPP) 2012-2016 (5-Year) data for the workers in Kings County Census tract numbers 808, 810, 814, 816, 870, 872, 874.01, 876, and 878 was utilized to calculate modal split rates. The Saturday temporal and directional distributions were assumed to be similar to the weekday afternoon peak hour. Of the 326 total supportive housing units, 51 units would be dedicated for youth aging out of foster care or young adults between the ages of 18 and 25. These 51 units have been categorized as "Residential" units for trip generating purposes as their trip-making characteristics would be most similar to the Residential land use category.

Grocery Store

The trip generation rates, temporal distributions, modal splits and in/out splits are based on the 2021 *CEQR Technical Manual*; NYCDOT surveys for mode share; and *East New York Rezoning FEIS (2015)* for vehicle occupancy and truck trip generation and temporary distribution.

Community Facility Space

The community facility land use in the project would comprise a ballet studio, resident social service space, emergency food service center and SEIU facility, which would include a day care element. Factors for the community facility spaces are based on the NYCDOT recommended rates and *East New York Rezoning EIS (2015)*. Transportation planning factors for the day care facility are based on the *East New York Rezoning EIS (2015), CEQR Technical Manual*, Journey-To-Work ("JTW") and Reverse-Journey-To-Work ("RJTW") census data. The balance of the SEIU facility is assumed to have similar trip-making characteristics as an office; therefore, factors used to forecast the travel demand of an office were developed from the *CEQR Technical Manual* and RJTW census data.

Open Space

The open space component of the Project comprises 0.64 acres of private gardens that would be restricted to the residents of the development and 2.16 acres of passive publicly accessible open space. The private gardens would not generate additional trips to the Project Site beyond the residents and their guests included in the residential trip-making assumptions. Transportation planning factors for the public open space are based on the *CEQR Technical Manual* and *Saint Vincents Campus Redevelopment FEIS (2012)* for a passive park space land use. All trips generated by the open space were assumed to be walk trips given the size of the space and the lack of specific programmed space (i.e., no playground, baseball fields, basketball courts, etc.).

TRAVEL DEMAND FORECAST

The person and vehicle trips expected to result from the Proposed Project are expressed as an "incremental change" or "net change" in trips. This incremental change is calculated by comparing estimated numbers of trips resulting from the Proposed Project (in the 2031 analysis year) to the number of trips estimated to be occurring in the vicinity of the Project Site without the Proposed Actions in 2031. Person and vehicle trips are calculated based on the transportation planning factors shown previously in Table 14-2, "Transportation Planning Factors."

Table 14-3, "Travel Demand Forecast," lists the estimated incremental change in peak-hour person trips and vehicle trips, respectively (as compared to conditions in the area without the Proposed Project) that would occur in 2031 with implementation of the Proposed Project.

The Proposed Project would be expected to generate a net increase of approximately 1,043 person trips in the weekday AM peak hour, 670 person trips in the weekday midday, 1,162 person trips in the weekday PM peak hour, and 1,092 person trips in the Saturday midday peak hour. These person trips can be translated into modal trip "types" for the entire study area as follows:

1. Peak hour vehicle trips (including auto, truck, and taxi trips balanced to reflect that some taxis arrive or depart empty) are projected to result in additional trips — approximately 255, 145, 277, and 209 vehicle trips ("in" and "out" trips, combined) in the weekday AM, midday, PM, and Saturday midday peak hours, respectively.
2. The Proposed Project is projected to introduce additional peak hour transit trips (approximately 555, 298, 543, and 484 transit trips estimated for weekday AM, midday, PM, and Saturday midday peak hours, respectively). The transit trips are expected to be subway and bus trips. The nearest subway stations are 0.7 miles away. The majority of transit trips are expected to be subway trips with bus connecting trips to and from the subway stations.
3. Walk-only trips are projected to increase by approximately 181, 177, 259, and 293 trips during the respective weekday AM, midday, PM, and Saturday midday peak hours.

Table 14-3: Travel Demand Forecast

Land Use	Supportive Housing		Residential (Affordable- 3 or more floors)		Senior Housing		Day Care (Children)		Day Care (Parents)		Day Care (Staff)		Grocery Store		Community Center		Passive Park		Office (SEIU)		Total	
Size/Units	275	DU	478	DU	337	DU	5,000	sf	5,000	sf	5,000	sf	8,092	sf	16,994	sf	2.16	acres	16,384	sf		
Peak Hour Trips:																						
AM	132		364		256		28		55		8		83		79		3		37		1,043	
MD	41		219		154		0		0		1		145		65		13		32		670	
PM	163		332		234		28		55		8		220		79		13		31		1,162	
Sat MD	102		365		257		0		0		0		231		108		21		9		1,092	
Person Trips:																						
AM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	48	17	20	70	30	34	7	0	7	7	4	0	16	16	5	3	0	0	16	2	153	149
Taxi	1	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Subway (1)	23	8	40	142	60	68	14	0	14	14	2	0	2	2	1	1	0	0	8	1	164	236
Bus (1)	16	6	14	49	21	23	5	0	5	5	1	0	2	2	1	1	0	0	5	1	69	86
Walk/Other	10	3	6	21	9	10	2	0	2	2	1	0	22	21	40	26	1	1	3	0	96	85
Total	**98**	**34**	**80**	**284**	**120**	**136**	**28**	**0**	**28**	**28**	**8**	**0**	**42**	**41**	**48**	**31**	**1**	**1**	**33**	**4**	**485**	**558**
MD	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	11	9	27	27	19	19	0	0	0	0	0	0	29	28	4	3	0	0	8	8	98	95
Taxi	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Subway (1)	5	4	55	55	39	39	0	0	0	0	0	0	4	4	1	1	0	0	4	4	107	106
Bus (1)	4	3	19	19	13	13	0	0	0	0	0	0	4	4	1	1	0	0	2	3	43	42
Walk/Other	2	2	8	8	6	6	0	0	0	0	0	0	38	36	30	25	7	7	2	2	92	85
Total	**22**	**18**	**109**	**109**	**77**	**77**	**0**	**0**	**0**	**0**	**0**	**0**	**74**	**71**	**36**	**29**	**7**	**7**	**16**	**17**	**341**	**329**
PM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	15	65	52	30	31	27	0	7	7	7	0	4	43	43	3	6	0	0	3	13	153	201
Taxi	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Subway (1)	7	32	105	62	62	55	0	14	14	14	0	2	5	5	1	2	0	0	1	6	195	191
Bus (1)	5	21	36	21	21	19	0	5	5	5	0	1	5	5	0	1	0	0	1	4	74	83
Walk/Other	3	13	15	9	9	8	0	2	2	2	0	1	56	56	19	47	7	7	1	3	112	147
Total	**31**	**132**	**209**	**123**	**124**	**110**	**0**	**28**	**28**	**28**	**0**	**8**	**110**	**110**	**23**	**56**	**7**	**7**	**5**	**26**	**537**	**626**
Saturday	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	19	31	46	44	40	24	0	0	0	0	0	0	45	45	6	6	0	0	2	2	158	153
Taxi	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Subway (1)	9	15	93	89	80	49	0	0	0	0	0	0	2	6	2	2	0	0	1	1	187	162
Bus (1)	6	10	32	31	27	17	0	0	0	0	0	0	2	6	1	1	0	0	1	1	70	65
Walk/Other	4	6	14	13	12	7	0	0	0	0	0	0	66	59	44	46	11	11	0	0	150	143
Total	**39**	**63**	**186**	**179**	**159**	**98**	**0**	**0**	**0**	**0**	**0**	**0**	**115**	**115**	**53**	**55**	**11**	**11**	**5**	**5**	**567**	**525**
Vehicle Trips:																						
AM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	39	14	16	57	24	27	7	0	0	7	3	0	10	10	3	2	0	0	15	2	117	118
Taxi/Drop-off	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
Taxi Balanced	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Truck	2	2	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Total	**41**	**16**	**20**	**60**	**27**	**30**	**7**	**0**	0	**7**	**3**	**0**	**10**	**10**	**3**	**2**	**0**	**0**	**15**	**2**	**127**	**128**
MD	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	9	7	18	18	13	13	0	0	0	0	0	0	17	17	2	2	0	0	7	8	67	65
Taxi/Drop-off	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Taxi Balanced	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Truck	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Total	**10**	**9**	**21**	**21**	**14**	**14**	**0**	**0**	0	0	**0**	**0**	**18**	**17**	**3**	**2**	**0**	**0**	**8**	**8**	**74**	**71**
PM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	12	52	42	25	25	22	0	7	7	0	0	3	26	26	2	4	0	0	2	12	116	150
Taxi/Drop-off	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
Taxi Balanced	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	**13**	**53**	**44**	**27**	**26**	**23**	**0**	**7**	**7**	0	**0**	**3**	**26**	**26**	**2**	**4**	**0**	**0**	**3**	**12**	**121**	**156**
Saturday	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	15	15	31	30	27	16	0	0	0	0	0	0	27	27	4	4	0	0	2	2	106	94
Taxi/Drop-off	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Taxi Balanced	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	**16**	**16**	**33**	**32**	**28**	**18**	**0**	**0**	0	0	**0**	**0**	**27**	**27**	**4**	**4**	**0**	**0**	**2**	**2**	**110**	**99**

(1) "Bus" are bus-only trips and most "Subway" trips would start or end near the project site as bus trips.

Source: STV Incorporated, 2023.

14.5 Level 2 Screening Assessment

A Level 2 screening assessment involves the assignment of project-generated trips to the study area street network, pedestrian elements, and transit facilities, and the identification of specific locations where the incremental increase in demand may potentially exceed *CEQR Technical Manual* analysis thresholds and therefore require a quantitative analysis.

VEHICULAR TRAFFIC

Based upon the projected development associated with the Proposed Project, there would be 255 additional vehicle trips during the weekday AM peak hour, 145 during the midday peak hour, 277 during the PM peak hour, and 209 vehicle trips during the Saturday midday peak hour. These traffic volumes would exceed the *CEQR Technical Manual* threshold of 50 vehicle trip ends during the peak hours for Level 1 screening, and therefore a Level 2 screening is performed to help identify intersections for detailed analysis.

The *CEQR Technical Manual* Level 2 screening threshold for detailed analysis is also 50 vehicle trip ends, but this threshold applies to individual intersections during the peak hours (rather than total trips generated). A preliminary assignment of peak hour traffic volumes is performed to identify the intersections that would potentially exceed the 50-trip-end threshold during these periods; these trip assignments are presented in the net incremental peak hour vehicle trip figures shown in Section 14.7 "Traffic" (see Figures 14-12 to 14-15). Vehicle assignments were based on the CTPP 2012-2016 (5-Year) for JTW and RJTW flow (origin-destination) data. The intersections most likely to be used by concentrations of action-generated vehicles traveling to and from the Proposed Project sites are then selected for detailed analysis. Figure 14-2, "Traffic Study Intersections," identifies the intersections selected for detailed analysis. The Proposed Project would include two private driveways and the intersection of these new driveways with the existing street network is analyzed for the With Action scenario.

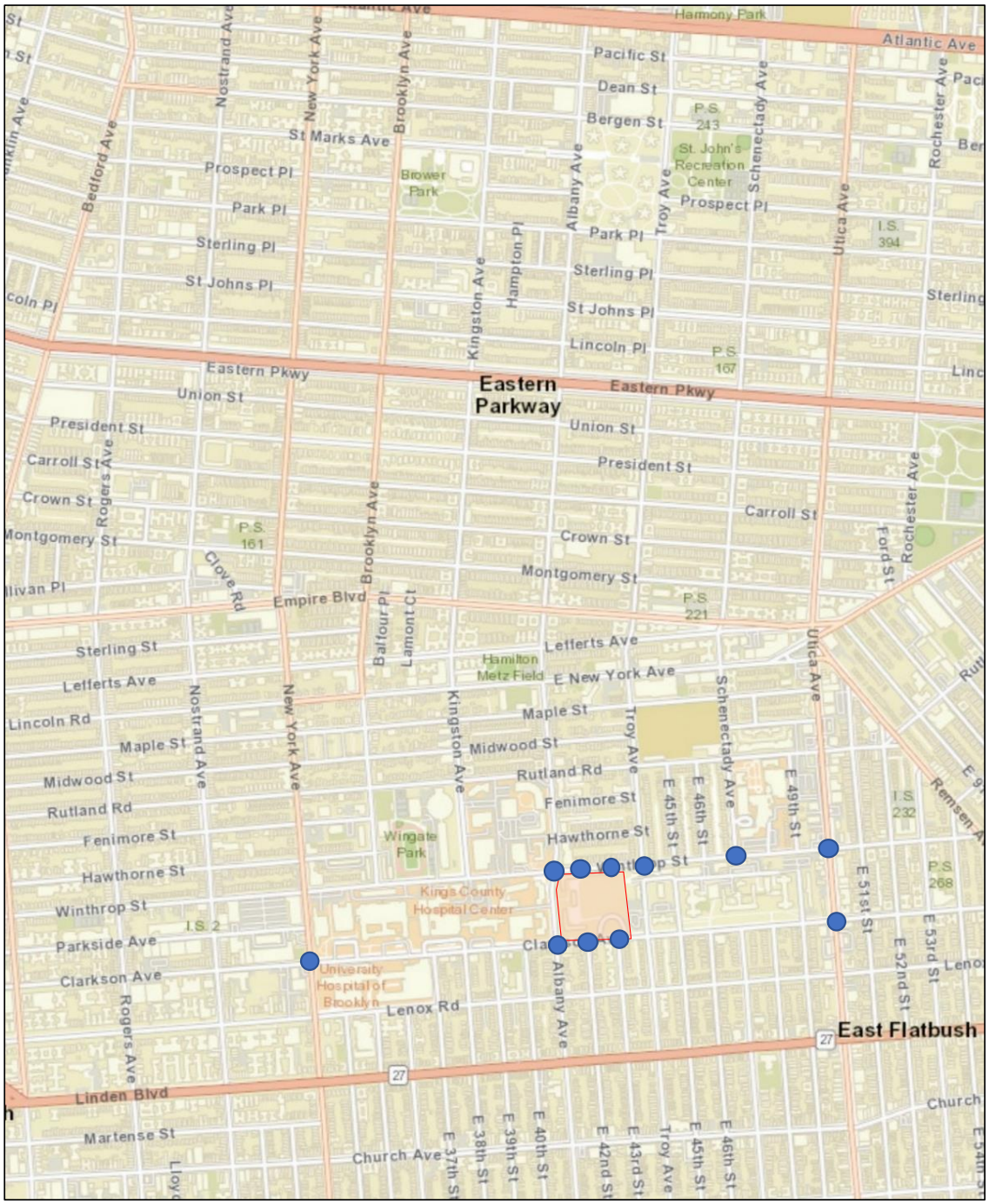

Figure - 14-2
Traffic Study Intersections

Kingsboro Psychiatric Center Mixed-Use Project

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TRANSIT

According to the general thresholds used by the MTA and specified in the *CEQR Technical Manual*, detailed transit analyses are generally not required if a proposed action is projected to result in fewer than 200 peak hour rail or bus transit riders. If a proposed action would result in 50 or more bus passengers being assigned to a single bus line (in one direction), or if it would result in an increase of 200 or more passengers at a single subway station or on a single subway line, a detailed bus or subway analysis would be warranted.

The Proposed Project is expected to generate over 200 peak hour rail trips on a single line and would also result in greater than 50 bus passengers being assigned to a single bus line in one direction. Therefore, a detailed bus and subway analysis is warranted.

Bus

The Project Site is served by four MTA local bus routes (see Figure 14-3, "Study Area Bus and Subway Routes"). The MTA local bus routes serving the Project area include the following:

- B12 runs along Clarkson Avenue and Albany Avenue adjacent to the site and provides service between Prospect Lefferts Gardens and Jewel Square in East New York. It offers connections to the 2 and 5 subway lines at the Winthrop Street Station and the Q subway line at the Parkside Avenue Station.
- B44 provides service between Sheepshead Bay Knapp Street and Williamsburg Bridge Plaza via Nostrand and New York Avenues less than three-quarter of a mile west of the Project Site.
- B46 provides service between Kings Plaza and Williamsburg Bridge Plaza via Utica Avenue about one half mile east of the Project Site.
- B35 provides service between Brownsville Mother Gaston Boulevard and First Avenue/Sunset Park via Church Avenue about one half mile south of the Project Site.

B12 bus stops are located adjacent to the Project Site on Clarkson and Albany Avenues. B35 and B46 bus stops are located within a half-mile walking distance and B44 bus stops are located within a three-quarters-of-a-mile walking distance from the Project Site.

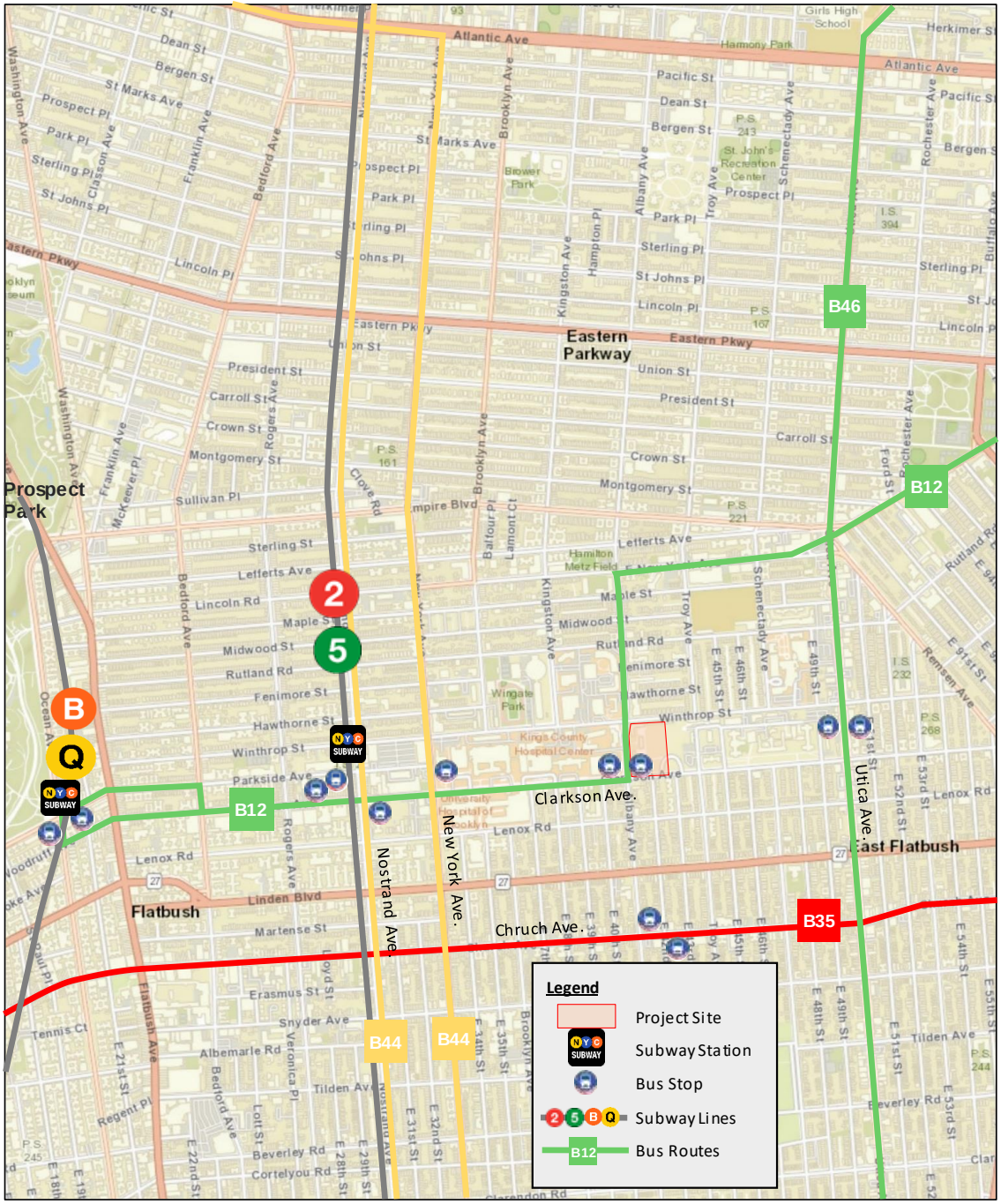


Figure - 14-3

Study Area Bus Routes and Subway Lines

Source: STV Incorporated, 2022

N

0 0.25 0.5 Miles

Kingsboro Psychiatric Center Mixed-Use Project

NEW YORK STATE OF OPPORTUNITY. Empire State Development

As listed in Table 14-4, "Incremental Peak Hour Bus Trips by Route," the Proposed Project is projected to generate approximately 429, 231, 421, and 374 bus trips during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. A portion of the subway trips would start and end as bus trips near the Project Site, and they have been included in these bus trip totals. All subway trips assigned to and from the Q train at the Parkside Avenue Station and half of the 2/5 train passengers at the Winthrop Street Station were assumed to transfer from or to buses. According to the general thresholds used by MTA and specified in the *CEQR Technical Manual*, a detailed analysis of bus conditions is generally not required if a proposed action is projected to result in fewer than 50 peak hour trips being assigned to a single bus route (in one direction), as this level of new demand is considered unlikely to result in significant adverse impacts. As a result of the Proposed Project, only the B12 bus route is expected to carry 50 or more new trips in either direction in the analysis peak hours and is analyzed for the weekday AM, midday, PM, and Saturday midday peak hours in both directions. Table 14-4, "Incremental Peak Hour Bus Trips by Route," lists the anticipated numbers of new riders expected on each local bus route in the weekday AM, midday, PM, and Saturday midday peak hours.

Table 14-4: Incremental Peak Hour Bus Trips by Route

Bus Route	Direction	AM	MD	PM	SAT
B12	Eastbound	*158*	*99*	*178*	*169*
	Westbound	*209*	*98*	*180*	*152*
B35	Eastbound	8	5	8	7
	Westbound	12	6	14	8
B44	Northbound	9	5	10	8
	Southbound	10	5	9	8
B46	Northbound	9	6	12	11
	Southbound	13	6	10	10

Source: STV Incorporated, 2023.

Subway

There are two primary NYCT subway stations in proximity to the Project Site that are expected to be used by the new trips generated from the Proposed Project (see Figure 14-3, "Study Area Bus Routes and Subway Lines"). Similar to the bus trips, the subway trip data was extracted from 2012-2016 CTPP JTW and RJTW data for the residents and workers adjacent to the Project Site. The subway trip assignment was estimated for the best subway routes to/from the Project Site based on the subway schedule and minimum travel time to/from the Project Site. Subway trips between the Proposed Project and each of these stations are summarized in Table 14-5, "Subway Line Distribution Percentages." The preferred stations for subway trips generated by the Proposed Project are the Winthrop Street Station (2/5) and Parkside Avenue (Q).

Table 14-5 – Subway Station Distribution Percentages

	In		Out	
Subway Line	Q	2/5	Q	2/5
Percent Distribution	39%	61%	40%	60%

Source: STV Incorporated, 2023.

As shown in Table 14-3, "Travel Demand Forecast," the Proposed Project would generate a net increment of approximately 400, 214, 386, and 349 subway trips during the weekday AM, midday, PM and Saturday midday peak hours, respectively. Trips from the Proposed Project site were assigned to the two subway stations in proximity to the study site. Table 14-6, "Net Incremental Peak Hour Subway Trips by Station," identifies the estimated net incremental subway trips generated by the Proposed Project during the weekday AM, midday, PM, and Saturday midday peak hours at each of the two subway stations in proximity of the study site.

Table 14-6 – Net Incremental Peak Hour Subway Trips by Station

Subway Station	AM			Midday			PM			Saturday		
	To KPC Site	From KPC Site	Total	To KPC Site	From KPC Site	Total	To KPC Site	From KPC Site	Total	To KPC Site	From KPC Site	Total
Project Summary												
Peak Hour Project-Generated Trips	485	558	1,043	341	329	670	537	626	1,162	567	525	1,092
Peak Hour Project-Generated Subway Trips	164	236	400	107	106	214	195	191	386	187	162	349
Subway Station/ Subway Line												
Winthrop St. (2/5)	100	143	*243*	65	64	130	119	115	*235*	114	98	*212*
Parkside Ave. (Q)	64	93	157	42	42	84	76	75	152	73	64	137
Total	164	236	400	107	106	214	195	191	386	187	162	349

Note: Underlined/ Italicized numbers show stations and time periods requiring detail transit analysis as per NYC CEQR Technical

Source: STV Incorporated, 2023.

Based on these projections, a detailed subway analysis would be required for the Winthrop Street Station (Nos. 2 and 5 trains) during the AM and PM peak hours as this station would exceed the 200-trip *CEQR Technical Manual* analysis threshold. For this station, key circulation elements (e.g., street stairs, platform stairs, and fare arrays) expected to be used by the concentrations of new demand from the Proposed Project would be analyzed for the weekday AM and PM peak hours, including street stairs on the northeast corner of Nostrand Avenue and Winthrop Street and street stairs on the southwest corner of Nostrand Avenue and Parkside Avenue.

PEDESTRIANS

Per the *CEQR Technical Manual*, detailed pedestrian analyses are generally warranted if a proposed action is projected to result in 200 or more new peak hour pedestrians at any sidewalk, corner reservoir area, or crosswalk. As shown previously in Table 14-3, "Travel Demand Forecast," the Proposed Project is

expected to generate approximately 181 walk-only trips in the weekday AM peak hour, 177 in the midday peak hour, 259 in the PM peak hour, and 293 in the Saturday midday peak hour. Persons en route to and from bus stops would add approximately 155, 85, 157, and 135 pedestrian trips to area sidewalks and crosswalks during these same periods, respectively. Also, persons en route to and from subway stations would add approximately 400, 214, 386, and 349 pedestrian trips to area sidewalks and crosswalks during these same periods, respectively. Total pedestrian trips to from the Project Site are estimated at approximately 736, 476, 802, and 777 pedestrian trips to area sidewalks and crosswalks during these same periods, respectively. It is expected that during the AM and PM peak periods, pedestrian trips attributable to the Proposed Project would be concentrated on sidewalks and crosswalks adjacent to the Project Site and along routes to and from the bus stops and subway stations. During the weekday and Saturday midday periods, pedestrian trips would be expected to be dispersed, as people travel throughout the area for restaurants, shopping, or errands at the local commercial land uses located adjacent to the Proposed Project.

The analysis of pedestrian conditions in the EIS focuses on the representative pedestrian elements where new trips generated by the Proposed Project are expected to be most concentrated. Specifically, pedestrian elements are examined at:

- Clarkson Avenue and Albany Avenue – north crosswalk and northwest and northeast corners
- Winthrop Street and Albany Avenue – south crosswalk and southwest and southeast corners
- Clarkson Avenue between Albany Avenue and East 42nd Street – north sidewalk
- Clarkson Avenue between East 42nd Street and East 43rd Street – north sidewalk
- Albany Avenue between Clarkson Avenue and Winthrop Street – east sidewalk

PARKING

Peak parking demand from nearby commercial/retail and medical uses typically occurs in the weekday midday period and declines during the afternoon and evening. In contrast, peak parking demand associated with residential uses typically occurs during the overnight period.

As currently envisioned, the proposed number of on-site parking spaces is not anticipated to accommodate the overall incremental parking demand that would be generated by the Proposed Project. As such, detailed existing off-street parking inventories were conducted to document the existing supply and demand during each period. On-street parking surveys were conducted to determine the number of spaces within an acceptable walking distance (i.e., a quarter-mile radius) of the Project Site. Surveys were conducted during the weekday overnight period (when the highest residential parking demand would be expected), during the weekday midday period (when the fewest number of on-street parking spaces are available due to street-cleaning regulations), and during the Saturday midday period, which experiences the second highest on-street parking demand from the Proposed Project due to the weekend residential and employee parking demand for the supportive housing and shelter land uses. The weekday PM peak

period experiences a lower parking demand than the weekday AM, midday, and Saturday midday peak periods. Furthermore, no on-street street-cleaning parking regulations are in effect during the weekday PM peak period. Based on this information, detailed parking surveys were performed for the more critical weekday AM, midday, and Saturday midday peak periods. The parking analysis documents the parking supply and utilization on the Project Site and within a quarter-mile radius of the Project Site, both with and without the Proposed Project.

Parking demand generated by the affordable residential and senior housing component of the Proposed Project is forecasted based on U.S. Census ACS data for Kings County Census Tract 820, which includes several six- and eight-story residential buildings with no off-street parking that would be comparable to the Proposed Project. The household vehicle ownership for this census tract is 0.29 vehicles per household and was used for estimating the residential parking demand. Parking demand generated from all other uses was derived from the forecasts of daily auto trips from these uses. The projected new on-site parking supply associated with the Proposed Project is incorporated into the analysis to determine the incremental on-street parking demand generated by the Proposed Project.

14.6 Analyses Methodologies

In order to assess the potential effects of the Proposed Project, both the "future without the Proposed Actions" ("No Action") and the "future with the Proposed Actions" ("With Action"), conditions are analyzed for an analysis year of 2031 for all transportation analyses, described in this section. The No Action conditions include background growth, additional transportation-system demand, and any changes expected by the year 2031. The increase in travel demand resulting from the Proposed Project is then added to the No Action conditions to develop the With Action conditions. Methodologies for each of the transportation analyses prepared for the Proposed Project are described in the following sections.

TRAFFIC

Analysis Methodology

The traffic analysis examines conditions in the weekday AM, midday, PM, and Saturday midday peak hours when the increased travel demand attributable to the Proposed Project is expected to be the greatest. These peak hours are selected based on existing traffic volumes in the study area as reflected in automatic traffic recorder ("ATR") and turning movement count ("TMC") data.

The intersection capacity analyses are based on the methodology presented in the *Highway Capacity Manual* ("HCM") and are conducted using Synchro 11 software. Traffic data required for these analyses include the hourly volumes on each approach, turning movements, the percentage of trucks and buses,

and pedestrian volumes at crosswalks. Field inventories are also necessary to document the physical layout, street widths, lane markings, curbside parking regulations, traffic signal timings/phasings, and other relevant characteristics needed for the analysis.

The HCM methodology produces a volume-to-capacity ("v/c") ratio for each signalized intersection approach. The v/c ratio represents the ratio of an approach's traffic volume to its carrying capacity. A v/c ratio of less than 0.90 is generally considered indicative of non-congested conditions in dense urban areas; when higher than this value, the ratio reflects increasing congestion. At a v/c ratio between 0.95 and 1.0, near-capacity conditions are reached, and delays can become substantial. Ratios of greater than 1.0 indicate saturated conditions with queuing. The HCM methodology also expresses the quality of traffic flow in terms of LOS, which is based on the amount of delay that a driver experiences at an intersection. Levels of service range from A, representing minimal delay (10 seconds or less per vehicle), to F, which represents long delays (greater than 80 seconds per vehicle).

For unsignalized intersections, the HCM methodology generally assumes that traffic on major streets is not affected by traffic flows on minor streets. Left turns from a major street are assumed to be affected by the opposing, or oncoming, traffic flow on that major street. Traffic on minor streets is affected by all conflicting movements. Similar to signalized intersections, the HCM methodology expresses the quality of traffic flow at unsignalized intersections in terms of LOS based on the amount of delay that a driver experiences. LOS definitions used to characterize traffic flows at unsignalized intersections differ somewhat from those used for signalized intersections, primarily because drivers anticipate different levels of performance from the two different kinds of intersections. For unsignalized intersections, LOS ranges from A, representing minimal delay (10 seconds or less per vehicle, as it is for signalized intersections), to F, which represents long delays (greater than 50 seconds per vehicle, compared to greater than 80 seconds per vehicle for signalized intersections).

The delay levels for signalized intersections are detailed below.

- LOS A describes operations with very low delay, i.e., up to 10 seconds per vehicle. This occurs when signal progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all.
- LOS B describes operations with delay in the range of 10 to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. Again, most vehicles do not stop at the intersection.
- LOS C describes operations with delay in the range of 20 to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The number of vehicles stopping at an intersection is significant at this level, although many still pass through without stopping.

- LOS D describes operations with delay in the range of 35 to 55 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles that do not stop declines.
- LOS E describes operations with delay in the range of 55 to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios.
- LOS F describes operations with delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with cycle failures. Poor progression and long cycle lengths may also be contributing to such delays. Often, vehicles do not pass through the intersection in one signal cycle.

The LOS thresholds for unsignalized intersections differ slightly from those for signalized intersections. Delay levels for unsignalized intersections are detailed below.

- LOS A describes operations with very low delay, i.e., up to 10 seconds per vehicle. This generally occurs when little or no delay is experienced at the intersection.
- LOS B describes operations with delay in the range of 10 to 15 seconds per vehicle. This generally occurs when short traffic delays are experienced at the intersection.
- LOS C describes operations with delay in the range of 15 to 25 seconds per vehicle. This generally occurs when average traffic delays are experienced at the intersection.
- LOS D describes operations with delay in the range of 25 to 35 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable, and longer traffic delays are experienced.
- LOS E describes operations with delay in the range of 35 to 50 seconds per vehicle. At LOS E, there is obvious congestion, and very long traffic delays are experienced at the intersection.
- LOS F describes operations with delay greater than 50 seconds per vehicle. At LOS F, there is heavy congestion, and excessive traffic delays are experienced at the intersection.

For both signalized and unsignalized intersections, LOS A, B, C, and D are considered acceptable; LOS E and F are considered unacceptable.

Significant Impact Criteria

The identification of significant adverse traffic impacts at analyzed intersections is based on criteria presented in the *CEQR Technical Manual*.

- If a lane group in the With Action Condition is within LOS A, B, C, or D (average control delay less than or equal to 55.0 seconds/vehicle for signalized intersections and delay less than or equal to 35.0 seconds/vehicle for unsignalized intersections), the impact is not considered significant.

- For a lane group that would operate at LOS E in the With Action Condition, a projected increase in delay of 5.0 or more seconds compared to the No Action condition is considered a significant impact.
- For a lane group that would operate at LOS F in the With Action Condition, a projected increase in delay of 4.0 or more seconds compared to the No Action condition is considered a significant impact.

In addition to these requirements, for the minor street of an unsignalized intersection to experience a significant impact, at least 90 passenger car equivalents ("PCEs") must be identified in the future With Action condition.

TRANSIT

Analysis Methodology

Bus

The operating conditions for bus service are measured in terms of the number of passengers carried per bus at the maximum load point for each route. This is determined by dividing the peak hour passenger count by the number of buses during that hour. The bus load levels are compared with MTA NYCT loading guidelines of 54 passenger spaces for a 40-foot standard bus and 85 passenger spaces for a 60-foot articulated bus.

Subway Stations

The methodology for assessing subway station pedestrian circulation elements (stairs, escalators, passageways) and fare control elements (turnstiles) compares existing and projected pedestrian volumes with the element's design capacity to yield a v/c ratio. All analyses examine pedestrian flow volumes during a peak 15-minute interval within the peak hours.

The capacity of a stairway or passageway is determined based on four factors: the NYCT guideline capacity, the effective width, and surging and counter-flow factors, if applicable, as per *CEQR Technical Manual* guidelines. NYCT guideline capacity is ten passengers per minute per foot width ("pmf") for stairs and 15 pmf for passageways. The effective width of a stair or passageway is the actual width adjusted to reflect pedestrian avoidance of sidewalls and center handrails, if present. A surging factor is applied to existing pedestrian volumes to reflect conditions where pedestrian flows tend to be concentrated (or surged) during shorter periods within the 15-minute analysis interval. This factor, which is based on the size of the station and the proximity of the pedestrian element to the station platforms, can reduce the calculated capacity by up to 25 percent. Lastly, a friction (or counter-flow) factor reducing calculated

capacity by 10 percent is applied where opposing pedestrian flows use the same stair or passageway. No friction factor is applied if the flow is all in one direction.

The capacity of a turnstile is determined based on only two factors: the NYCT guideline capacity for a 15-minute interval and a surging factor of up to 25 percent as per *CEQR Technical Manual* guidelines. Table 14-7, "Level of Service Criteria for Subway Station Elements," presents the *CEQR Technical Manual* level of service criteria for all subway station elements. Six levels of service are defined in Table 14-7 with letters A through F. LOS A is representative of free flow conditions without pedestrian conflicts and LOS F depicts severe congestion and queuing.

Table 14-7: Level of Service Criteria for Subway Station Elements

LOS	Description	V/C Ratio
A	Free Flow	0.00 to 0.45
B	Free Flow	0.45 to 0.70
C	Fluid, somewhat restricted	0.70 to 1.00
D	Crowded, walking speed restricted	1.00 to 1.33
E	Congested, some shuffling and queuing	1.33 o 1.67
F	Severely congested, queued	> 1.67

Source: *CEQR Technical Manual.*

Subway Line Haul

Line haul capacity is based on the guideline capacity per subway car multiplied by the number of subway cars crossing the maximum load point in the peak hour. (Maximum guideline capacities established by NYCT for each car class are 110 passengers/car for a 51-foot subway car, 145 passengers/car for a 60-foot car, and 175 passengers/car for a 75-foot car.) The v/c ratio is determined by dividing the number of peak hour passengers traveling through the maximum load point by the line haul capacity. Maximum load point subway service and ridership data were provided by NYCT. The subway line haul analysis focuses on the weekday AM and PM commuter peak hours, as it is during these periods that overall demand on the subway system is usually highest.

Significant Impact Criteria

Bus

According to the *CEQR Technical Manual* and MTA NYCT guidelines, additional bus service along a route is recommended when load levels exceed maximum capacity at the route's maximum load point. A significant adverse impact is considered at the route's maximum load point where an increase in bus load levels would exceed the maximum capacity. MTA NYCT's general policy is to provide additional bus service where demand warrants increased service, taking into account fiscal and operational constraints.

Subway Stations

The *CEQR Technical Manual* identifies a significant impact for stairways and passageways in terms of the minimum width increment threshold ("WIT") based on the minimum amount of additional capacity that would be required to restore conditions to either their No Action v/c ratio or to a v/c ratio of 1.00 (LOS C/D), whichever is greater. Stairways that are substantially degraded in LOS or which experience the formation of extensive queues are classified as significantly impacted. Significant adverse stairway or passageway impacts are typically considered to have occurred once the thresholds listed in Table 14-8, "Significant Impact Thresholds for Stairways and Passageways," are reached or exceeded.

For turnstiles, escalators, and high-wheel exit gates, the *CEQR Technical Manual* defines a significant impact as an increase from a No Action v/c ratio of below 1.00 to a v/c ratio of 1.00 or greater. Where a facility is already at a v/c ratio of 1.00 or greater, a 0.01 change in v/c ratio is also considered significant.

Table 14-8: Significant Impact Thresholds for Stairways and Passageways

With Action V/C Ratio	WIT for Significant Impact (inches)	
	Stairway	Passageway
1.00-1.09	8	13
1.10-1.19	7	11.5
1.20-1.29	6	10
1.30-1.39	5	8.5
1.40-1.49	4	6
1.50-1.59	3	4.5
≥ 1.60	2	3

Source: *CEQR Technical Manual.*

Subway Line Haul

For subway line haul conditions, *CEQR Technical Manual* criteria specify that any increases in load levels that remain within practical capacity limits are generally not considered significant. However, significant adverse subway line haul impacts can occur if a Proposed Project is expected to generate an incremental increase averaging five or more riders per subway car on lines projected to carry loads exceeding guideline capacity. This is based on the general assumption that when subways are at or above practical capacity, the addition of even five or more riders per car is perceptible.

PEDESTRIANS

Analysis Methodology

Data on peak period pedestrian flow volumes are collected along analyzed sidewalks, corner areas, and crosswalks and then summarized to determine peak hour pedestrian volumes.

Pedestrian flow operating conditions during the weekday AM, midday, PM, and Saturday midday peak hours are analyzed using the HCM methodology and the NYCDOT-approved Excel spreadsheet as outlined in the *CEQR Technical Manual*. Using this methodology, the congestion level of pedestrian facilities is determined by considering pedestrian volume, measuring the sidewalk or crosswalk width, determining the available pedestrian capacity, and developing a ratio of volume flows to capacity conditions. The resulting ratio is then compared with LOS standards for pedestrian flow, measured in terms of pedestrian space.

At signalized and stop-controlled intersections, crosswalk and corner operations are often based on crosswalk time-space and pedestrian space. These operations are assessed based on the average effective area per pedestrian for each element, measured in square feet per pedestrian ("sf/ped"). The LOS for all crosswalk elements at a signalized intersection and for all corner elements at both a signalized and unsignalized intersection are defined in terms of these spaces. LOS A occurs when the average pedestrian space is greater than 60 sf/ped. LOS B, C, and D occur when the space is in the range of 40 to 60, 24 to 40, and 15 to 24 sf/ped, respectively. LOS E is at capacity operations, for a space from 8 to 15 sf/ped. LOS F describes congested conditions with an average space of 8 sf/ped or less.

Similarly, sidewalk and walkway operations are assessed based on the average effective area per pedestrian for each element, and also measured in square feet per pedestrian. The analysis of sidewalk conditions includes a "platoon" factor to more accurately estimate the dynamics of walking. "Platooning" is the tendency of pedestrians to move in bunched groups or platoons once they cross a street where traffic controls required them to wait. LOS A occurs when the average pedestrian space is greater than 530 sf/ped. LOS B, C, and D occur when the space is in the range of 90 to 530, 40 to 90, and 23 to 40 sf/ped, respectively. LOS E is at capacity operations, for a space from 11 to 23 sf/ped. LOS F describes congested conditions with an average space of 11 sf/ped or less.

Significant Impact Criteria

Corner Areas and Crosswalks

For non-central business district ("CBD") areas,[4] *CEQR Technical Manual* criteria define a significant adverse corner area or crosswalk impact to have occurred if the average pedestrian space under the No Action conditions is greater than 26.6 sf/ped and, under the With Action conditions, the average pedestrian space decreases to 24 sf/ped or less (LOS D or worse). If the pedestrian space under the With Action conditions is greater than 24 sf/ped (LOS C or better), the impact should not be considered significant. If the average pedestrian space under the No Action conditions is between 5.1 and 26.6 sf/ped, a decrease in pedestrian space under the With Action conditions may be considered significant,

[4] CBD areas include Midtown and Lower Manhattan, Downtown Brooklyn, Long Island City, Downtown Flushing, Downtown Jamaica, and similar districts.

depending on the magnitude of the decrease. Table 16-12 in the *CEQR Technical Manual* lists a sliding scale that identifies what decrease in pedestrian space is considered a significant adverse impact for a given amount of pedestrian space in the No Action conditions. If the decrease in pedestrian space is less than that value, the impact is not considered significant. If the average pedestrian space under the No Action conditions is less than 5.1 sf/ped, then a decrease in pedestrian space greater than or equal to 0.2 sf/ped should be considered significant.

Sidewalks

For non-CBD areas, *CEQR Technical Manual* criteria defines a significant adverse sidewalk impact to have occurred if the average pedestrian space under the No Action conditions is greater than 44.3 sf/ped and, under the With Action conditions, the average pedestrian space decreases to 40.0 sf/ped or less (LOS D or worse). If the pedestrian space under the With Action conditions is greater than 40.0 sf/ped (LOS C or better), the impact should not be considered significant. If the average pedestrian space under the No Action conditions is between 6.4 and 44.2 sf/ped, a decrease in pedestrian space under the With Action conditions may be considered significant, depending on the magnitude of the decrease. Table 16-14 in the *CEQR Technical Manual* lists a sliding scale that identifies what decrease in pedestrian space is considered a significant adverse impact for a given amount of pedestrian space in the No Action conditions. If the decrease in pedestrian space is less than that value, the impact is not considered significant. If the average pedestrian space under the No Action conditions is less than 6.3 sf/ped, then a decrease in pedestrian space greater than or equal to 0.3 sf/ped should be considered significant.

VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

Pursuant to *CEQR Technical Manual* guidelines, an evaluation of vehicular and pedestrian safety is needed for locations within the traffic and pedestrian study areas that have been identified as high crash locations. These are defined as a location identified along a Vision Zero corridor or intersection or one where there were five or more pedestrian/bicycle injury crashes in any consecutive twelve-month period of the most recent three-year period. For these locations, crash trends are identified to determine whether projected vehicular and pedestrian traffic could further impact safety, or whether existing unsafe conditions could adversely impact the flow of the projected new trips. The determination of potential significant safety impacts depends on the following: type of area where the Project Site is located, traffic volumes, crash types and severity, and other contributing factors. Where appropriate, measures to improve traffic and pedestrian safety should be identified and coordinated with NYCDOT.

PARKING

Analysis Methodology

The parking analysis identifies the supply of on- and off-street public parking near a Project Site and determines the extent to which the supply is utilized in existing conditions and in the future with and without a proposed action. The analysis considers anticipated changes in the study area's parking supply and demand and compares project-generated parking demand with future parking availability to determine if a parking shortfall is likely to result. The displacement of existing parking capacity attributable to the Proposed Actions or Project is also considered. Typically, the analysis encompasses the parking facilities — public parking lots and garages and on-street curb spaces — that vehicular traffic destined to the Project Site or area would likely utilize. According to the *CEQR Technical Manual*, a quarter-mile radius around a Project Site is generally assumed as the distance that someone driving to the site would be willing to walk. The parking analyses therefore document changes in the parking supply and utilization on the Project Site and within a quarter-mile radius of the site under both No Action and With Action conditions.

Significant Shortfall Criteria

Should a proposed action generate the need for more parking than it provides, a shortfall of spaces may be considered significant; however, a significant shortfall would not be considered an impact. The availability of on- and off-street parking spaces within a convenient walking distance, as well as the availability of alternative modes of transportation, are considered in making this determination.

Pursuant to *CEQR Technical Manual* guidelines, different criteria for determining significance are applied based on whether or not a proposed action is located in residential or commercial areas designated as Parking Zones 1 and 2, as shown on Map 16-2 (CEQR Parking Zones) in the *CEQR Technical Manual*. As this project is not located within these two zones, a parking shortfall that exceeds more than half the available on- and off-street parking spaces within a quarter-mile of the site can be considered significant. Additional factors that can be considered when determining whether such a shortfall is significant include: the availability and extent of transit in the area; the proximity of the project to such transit; any features of the project that are considered trip reduction or travel demand management ("TDM") measures; travel modes of customers of area commercial businesses; and patterns of automobile usage by area residents. The sufficiency of parking within a half-mile (rather than a quarter-mile) of the Project Site to accommodate the projected shortfall may also be considered.

14.7 Traffic

EXISTING CONDITIONS

Study Area Street Network

The Project Site is part of a city block (Brooklyn Tax Block 4833, part of Lot 1) bounded by Clarkson Avenue to the south, Albany Avenue to the west, Winthrop Street to the north, and the operating Kingsboro Psychiatric Center site to the east. Kings County Hospital is located one block west of the Project Site (west of Albany Avenue).

Primary East-West Corridors

Clarkson Avenue is a local roadway east of Albany Avenue and a major collector roadway west of Albany Avenue. Clarkson Avenue runs east-west from Flatbush Avenue to the west to Remsen Avenue to the east. Within the Project area, Clarkson Avenue is generally 50 feet wide with a striped median and provides one moving travel lane per direction, a left-turn lane at selected intersections, and a curbside parking lane on each side of the street.

Winthrop Street is a major east-west collector roadway between New York Avenue to the west and Remsen Avenue to the east. Within the Project area, Winthrop Street is generally 35-feet wide and operates with one travel lane and a curbside parking lane in each direction.

Linden Boulevard (SR 27) is a principal arterial that parallels Clarkson Avenue two blocks to the south. Linden Boulevard runs east-west, connecting with Caton Avenue at Bedford Avenue to the west to North and South Conduit Avenues to the east. South of the Project Site, Linden Boulevard is generally 50-feet wide providing one travel lane and curbside parking in each direction, with dedicated left-turn lanes at intersections.

Primary North-South Corridors

Utica Avenue is a principal arterial roadway that runs north-south from Fulton Street to the north to Flatbush Avenue to the south. The roadway is 65 feet wide and provides one travel lane, one bus lane, and curbside parking in each direction.

Albany Avenue is a minor arterial roadway that runs north-south from between Decatur Street to the north and Snyder Avenue to the south. The roadway is 45 feet wide and provides one travel lane and curbside parking in each direction adjacent to the Project Site.

Bus Routes

MTA bus routes primarily operate along portions of the following study area corridors:

- Clarkson Avenue and Albany Avenue (B12)
- New York Avenue and Nostrand Avenue (B44)
- Nostrand Avenue and Rogers Avenue (B44 SBS)
- Linden Boulevard (B35)
- Utica Avenue (B46 and B46 SBS)

These bus routes are described in more detail below in Section 14.8, “Transit.”

Truck Routes

NYCDOT has established local and through truck routes to manage the flow of trucks and improve the quality of neighborhoods and defines a truck as “a vehicle which is designed for transportation of property, which has either of the following characteristics: two axles and six tires or three or more axles.” Through trucks are defined as having neither an origin nor a destination within the Borough of Brooklyn. Through truck routes nearest to the study area have been designated along Atlantic Avenue and North and South Conduit boulevards. Local truck routes are designated routes for trucks that are intended for the purpose of delivery, loading, or providing service within Brooklyn. Generally, trucks must travel on local truck routes to reach the intersection nearest their destinations. Designated local truck routes in the study area include Empire Boulevard to the north, Utica Avenue to the east, Linden Boulevard to the south, and Nostrand Avenue to the west.

Bicycle Lanes

There are no bicycle lanes on the streets adjacent to the Proposed Project. The closest bike lanes are the conventional bike lanes provided on Maple Street (westbound) and Lincoln Road (eastbound), located approximately quarter-mile north of Winthrop Street.

Traffic Conditions

A traffic data collection program was performed in January 2023 to establish the Existing Conditions traffic network, which included ATR counts and intersection turning movement and classification counts. At this time, physical inventory data needed for operational analysis — e.g., the number of traffic lanes, lane widths, pavement markings, turn prohibitions, bus stops, and typical parking regulations — were also collected. Signal timing plans for signalized intersections within the study area were obtained from NYCDOT.

Figure 14-4, “Existing Traffic Volumes - Weekday AM Peak Hour,” Figure 14-5, “Existing Traffic Volumes - Weekday Midday Peak Hour,” Figure 14-6, "Existing Traffic Volumes - Weekday PM Peak Hour,” and Figure

14-7, "Existing Traffic Volumes - Saturday Midday Peak Hour," show existing traffic volumes during each analysis peak hour.

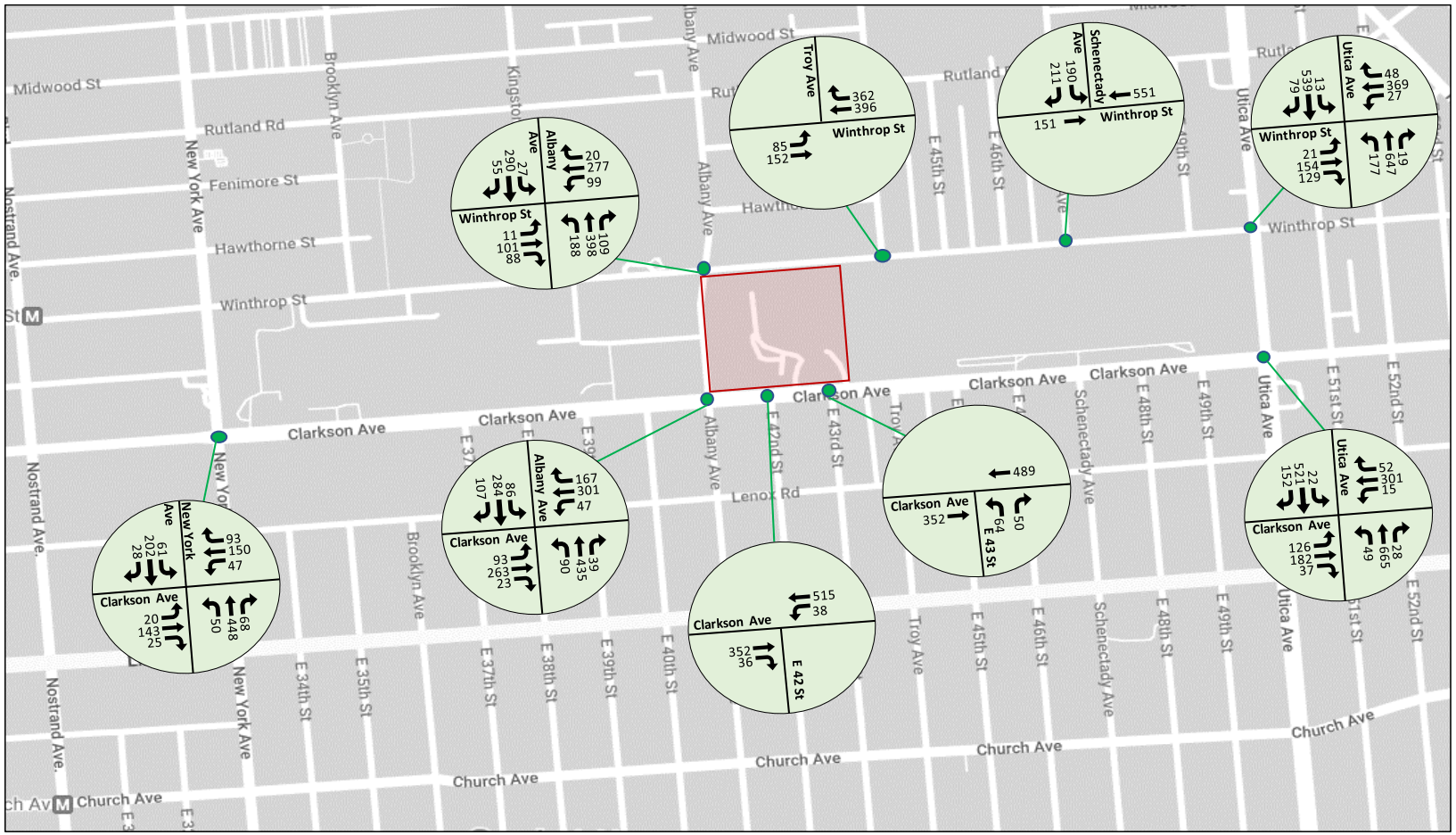
Traffic volumes vary through the study area during the peak hours. The highest traffic volumes are carried on Utica Avenue with approximately 700 southbound and 850 northbound vehicles per hour ("vph") in the AM peak hour, between 500 and 700 vph per direction in the weekday and Saturday midday peak hours, and 800 southbound and 700 northbound vph in the PM peak hour.

Adjacent to the Proposed Project, Clarkson Avenue processes between 350 and 550 vph per direction during the weekday AM and PM peak hours, with the higher volumes traveling westbound during the AM peak hour and eastbound during the PM peak hour. Clarkson Avenue processes between 250 and 350 vph per direction during the weekday and Saturday midday peak hours.

Traffic volumes along Winthrop Street adjacent to the Proposed Project are slightly lower than Clarkson Avenue. Winthrop Street processes about 250 vph eastbound and 400 vph westbound during the weekday AM peak hour and between 200 and 350 vph per direction during the weekday midday, PM, and Saturday midday peak hours.

Albany Avenue processes approximately 700 vph northbound and 500 vph southbound during the weekday AM peak hour and up to 600 vph per direction during the weekday PM peak hour. Traffic volumes are lower, between 400 and 500 vph during the weekday midday and Saturday midday peak hours.

Traffic volumes on the local one-way streets of East 42nd Street and East 43rd Street are low, less than 125 vph during each peak hour.



Project Site

0 0.25 0.5 Miles

Source: Esri; STV Incorporated, 2023

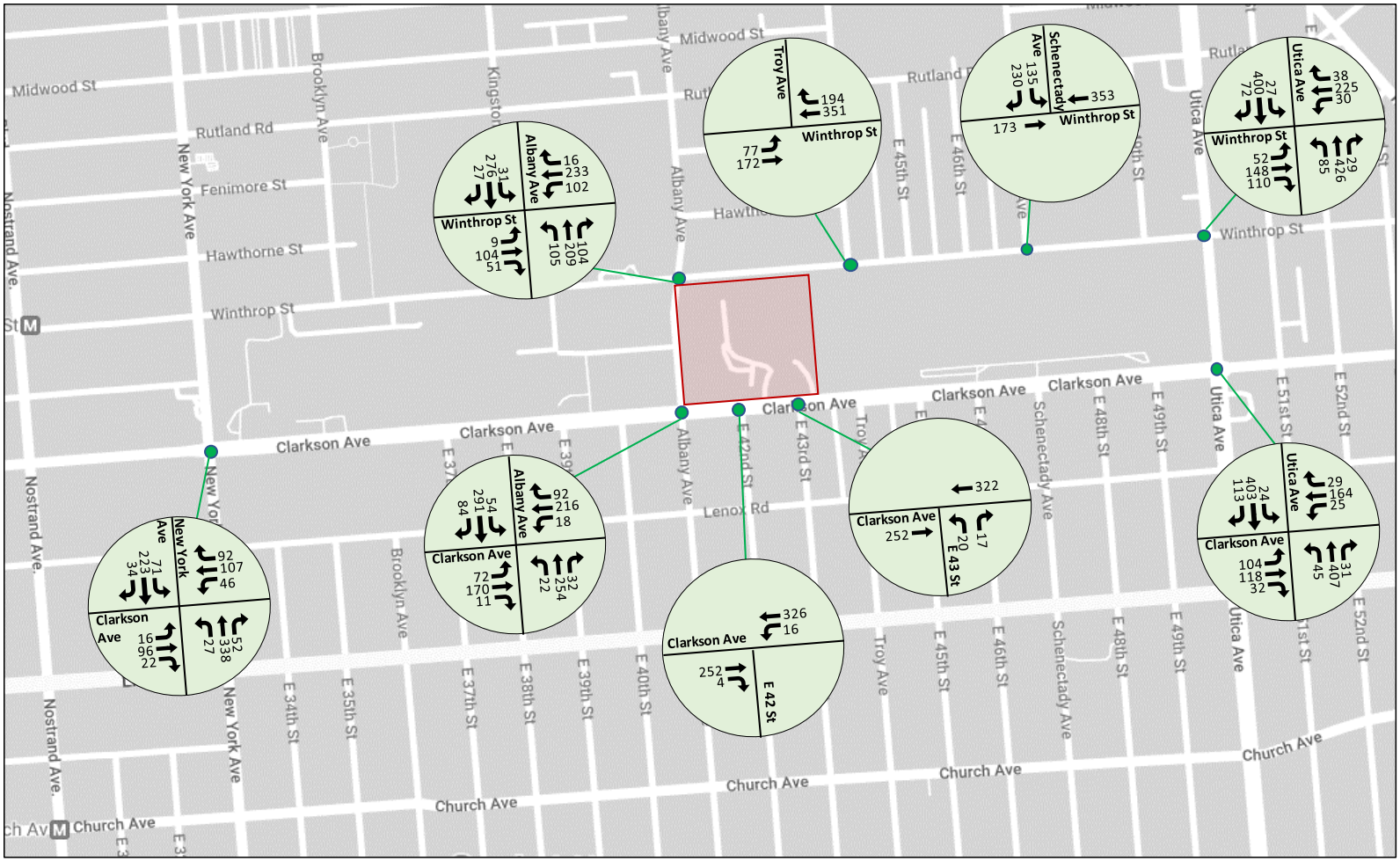
N

Figure 14-4

Existing Traffic Volumes - Weekday AM Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project

NEW YORK STATE OF OPPORTUNITY. Empire State Development



Project Site

0 0.25 0.5 Miles

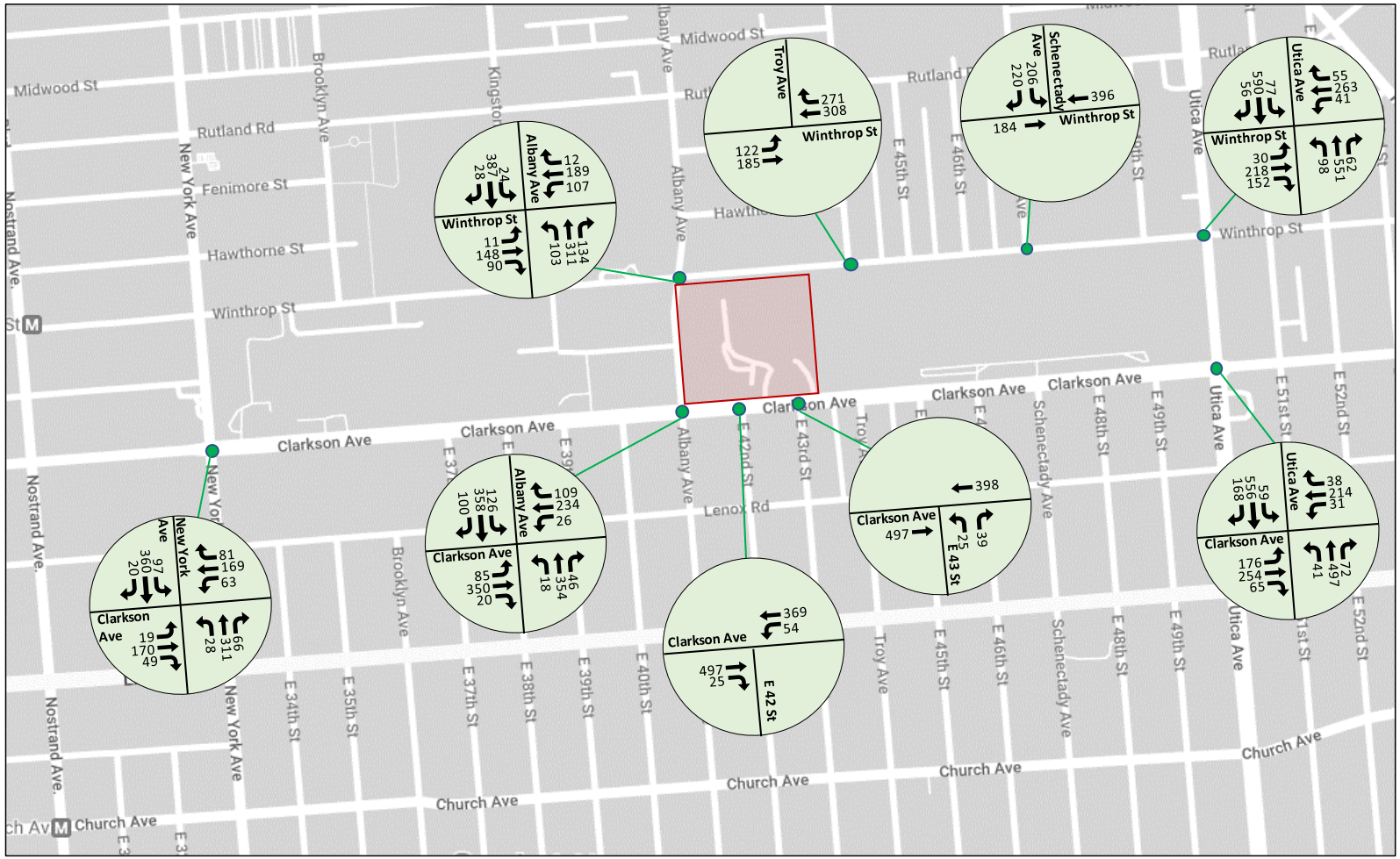
Source: Esri; STV Incorporated, 2023

N

Figure 14-5

Existing Traffic Volumes - Weekday Midday Peak Hour

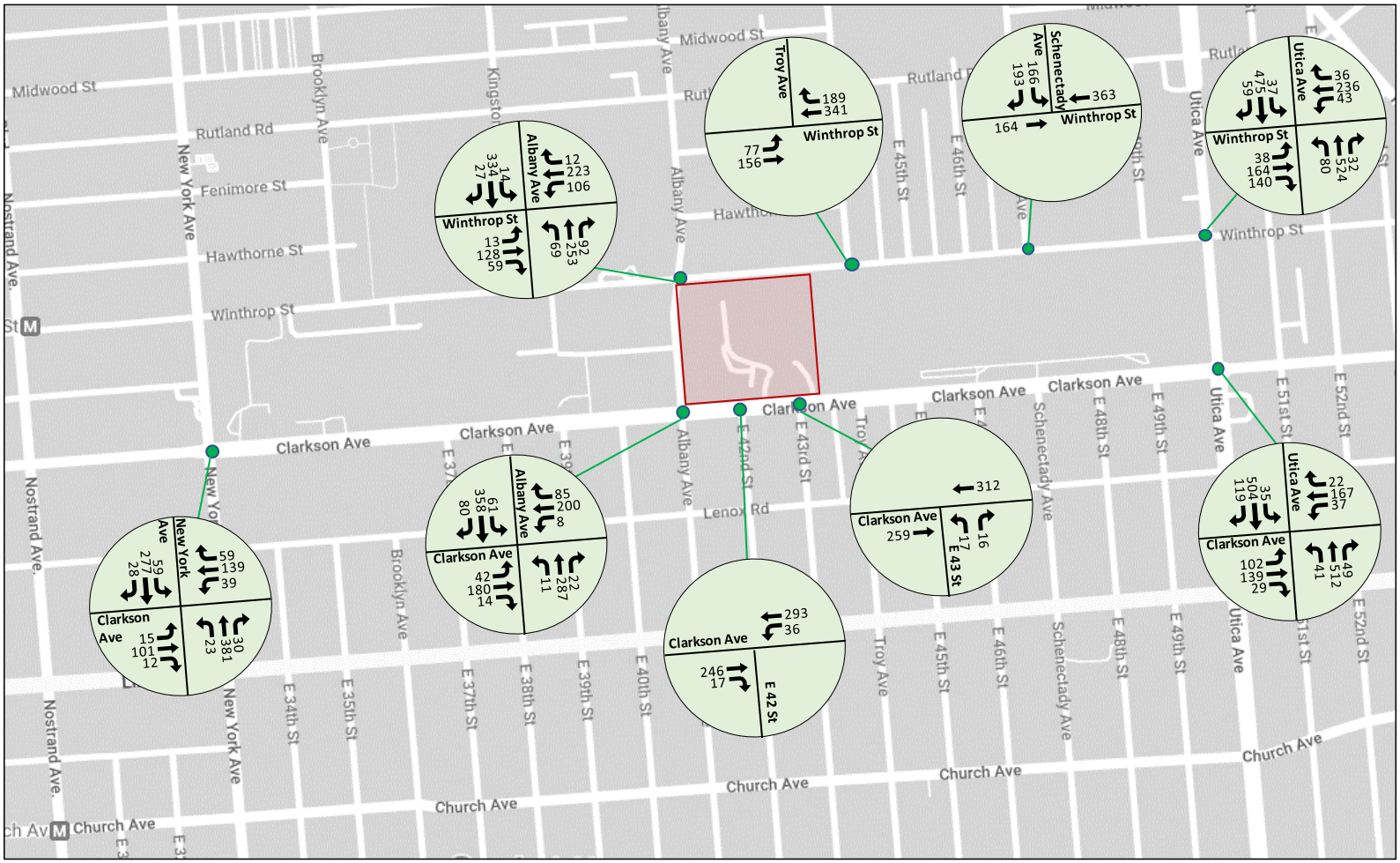
Kingsboro Psychiatric Center Mixed-Use Project



Source: Esri; STV Incorporated, 2023

Figure 14-6
Existing Traffic Volumes - Weekday PM Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project



Project Site

0 0.25 0.5 Miles

Source: Esri; STV Incorporated, 2023

N

Figure 14-7

Existing Traffic Volumes - Saturday Midday Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project

Intersection Capacity Analysis

Table 14-9, "2023 Existing Conditions Traffic Operations," lists the levels of service that characterize existing intersection conditions during the weekday AM, midday, PM, and Saturday midday peak hours. The overall LOS of an intersection represents a weighted average of the individual lane groups' LOS. "Overall" LOS E or F indicates that serious congestion exists — either one specific lane group at the intersection has severe delays or two or more lane groups at the intersection are at LOS E or F with substantial delays.

The analyses showed that the majority of the intersections in the Project study area operate at acceptable levels during the weekday AM, midday, PM, and Saturday midday peak analysis hours — with overall operations at LOS D or better (see Table 14-9, "2023 Existing Conditions Traffic Operations"). Two exceptions are the intersections of Winthrop Street and Troy Avenue, which operates at LOS E conditions during the AM peak hour due to the high-volume traffic turning northbound onto Troy Avenue during this period, and the intersection of Clarkson Avenue and Utica Avenue, which operates at LOS E conditions during the AM peak hour due to high east and westbound traffic volumes. Several intersections operate at overall LOS D or better, but with some individual movements operating with congestion as follows:

- At the intersection of Clarkson Avenue and Utica Avenue, the eastbound left-turn movement operates at LOS F conditions during the weekday AM and PM peak hours. This movement processes 126 (AM) and 176 (PM) vehicles during the peak hours, does not receive an exclusive turn phase, and must find acceptable gaps within an oncoming congested westbound approach that operates at LOS E and F during AM and PM peak hours. The eastbound shared through/right-turn lane also operates at LOS F conditions during the AM and PM peak hours and the westbound approach operates at LOS F and E during the same periods. Additionally, the northbound Utica Avenue through movement processes over 500 vph during the Saturday midday peak hour and operates at LOS E conditions.

- At the intersection of Clarkson Avenue and Albany Avenue, the eastbound left-turn movement and westbound shared through/right-turn movement operate at LOS F and E, respectively during the weekday AM peak hour. The eastbound left-turn movement processes more than 90 vph during the AM peak hour, does not receive an exclusive turn phase, and motorists must find acceptable gaps within an oncoming congested westbound traffic stream that operates from a single-lane approach.

- At the intersection of Clarkson Avenue and New York Avenue, the westbound shared through/right-turn movement operate at LOS F conditions during the weekday AM peak hour as this approach receives a green signal indication for only 27 percent of the total cycle length to provide a leading pedestrian interval for pedestrians crossing New York Avenue.

- At the intersection of Winthrop Street and Utica Avenue, the westbound approach operates at LOS E during the AM peak hour and the eastbound approach operates at LOS F during the PM peak hour. Each approach processes between 400 and 450 vph in the peak direction during the peak hours from a single travel lane.

- The westbound approach of Winthrop Street at Troy Avenue operates at LOS E conditions during the AM peak hour due to the high volume of right turns (362 vehicles) that are processed during this hour. This approach processes approximately 350 vehicles during each peak hour from a single travel lane.

- The westbound approach of Winthrop Street at Albany Avenue processes approximately 350 vph from a single travel lane and operates at LOS F conditions during the weekday midday and at LOS E conditions during the weekday PM and Saturday midday peak hours.

Table 14-9: 2023 Existing Conditions Traffic Operations

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			MD Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Signalized														
Clarkson Avenue and Utica Avenue														
Clarkson Avenue	EB	L	1.05	117.8	F	0.36	18.3	B	0.99	94.3	F	0.35	18.0	B
		TR	1.01	89.9	F	0.36	17.3	B	1.05	94.1	F	0.38	17.4	B
	WB	LTR	1.05	88.6	F	0.60	22.4	C	0.95	67.5	E	0.58	21.9	C
Utica Avenue	NB	L	0.24	14.6	B	0.24	15.1	B	0.21	14.0	B	0.38	20.9	C
		T	1.00	54.5	D	0.85	32.5	C	0.73	23.5	C	1.00	57.0	E
		R	0.05	11.2	B	0.07	12.0	B	0.13	11.9	B	0.12	12.4	B
	SB	L	0.16	14.8	B	0.14	7.1	A	0.26	13.0	B	0.32	13.9	B
		T	0.81	23.2	C	0.81	17.3	B	0.77	17.5	B	0.98	36.7	D
		R	0.23	13.7	B	0.24	7.3	A	0.27	12.2	B	0.28	10.8	B
Overall Intersection		-		**56.4**	**E**		**21.2**	**C**		**42.7**	**D**		**34.2**	**C**
Clarkson Avenue and Albany Avenue														
Clarkson Avenue	EB	L	1.04	116.4	F	0.46	30.9	C	0.53	27.2	C	0.23	23.5	C
		TR	0.76	29.4	C	0.38	24.3	C	0.82	33.5	C	0.43	25.1	C
	WB	L	0.28	18.7	B	0.07	20.2	C	0.18	17.0	B	0.03	19.7	B
		TR	1.05	70.8	E	0.77	37.5	D	0.85	36.7	D	0.64	31.1	C
Albany Avenue	NB	LTR	0.98	44.3	D	0.44	14.2	B	0.64	14.9	B	0.43	13.8	B
	SB	LTR	0.90	30.2	C	0.65	13.2	B	1.00	47.0	D	0.73	15.3	B
Overall Intersection		-		**48.0**	D		**22.0**	**C**		**33.6**	**C**		**20.0**	**B**
Clarkson Avenue and New York Avenue														
Clarkson Avenue	EB	LTR	0.67	30.0	C	0.48	31.8	C	0.88	48.8	D	0.40	29.6	C
	WB	L	0.27	20.7	C	0.23	27.3	C	0.45	26.2	C	0.17	26.0	C
		TR	1.03	81.9	F	0.71	41.2	D	0.91	53.8	D	0.63	36.3	D
New York Avenue	NB	LTR	0.93	35.8	D	0.64	20.4	C	0.67	18.0	B	0.58	18.6	B
	SB	LTR	0.62	17.7	B	0.62	20.7	C	0.87	30.7	C	0.58	19.2	B
Overall Intersection		-		**39.2**	**D**		**25.7**	**C**		**33.9**	**C**		**23.3**	**C**
Winthrop Street and Utica Avenue														
Winthrop Street	EB	LTR	0.87	48.9	D	0.73	23.5	C	1.05	88.3	F	0.73	23.0	C
	WB	LTR	1.03	77.8	E	0.63	19.0	B	0.89	51.4	D	0.66	19.8	B
Utica Avenue	NB	L	0.66	8.6	A	0.37	16.5	B	0.51	12.9	B	0.52	16.5	B
		T	0.99	17.8	B	0.85	29.7	C	0.87	19.0	B	1.04	53.9	D
		R	0.03	5.9	A	0.05	11.6	B	0.09	6.9	A	0.06	7.6	A
	SB	L	0.07	10.3	B	0.14	12.1	B	0.38	16.1	B	0.28	15.8	B
		T	0.82	27.3	C	0.83	29.6	C	0.89	33.7	C	0.98	51.1	D
		R	0.12	10.4	B	0.17	11.6	B	0.09	10.1	B	0.11	11.1	B
Overall Intersection		-		**36.0**	**D**		**24.2**	**C**		**39.6**	**D**		**36.9**	**D**

Table 14-9: 2023 Existing Conditions Traffic Operations (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			MD Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Winthrop Street and Schenectady Avenue														
Winthrop Street	EB	T	0.25	8.8	A	0.25	11.6	B	0.25	8.9	A	0.23	11.4	B
	WB	T	0.77	18.8	B	0.52	15.5	B	0.54	12.4	B	0.48	14.5	B
Schenectady Avenue	SB	L	0.44	19.0	B	0.29	22.8	C	0.44	19.0	B	0.33	23.4	C
		R	0.52	21.2	C	0.55	28.4	C	0.57	22.2	C	0.47	26.1	C
Overall Intersection		-		**17.8**	**B**		**19.0**	**B**		**15.4**	**B**		**18.3**	**B**
Winthrop Street and Troy Avenue														
Winthrop Street	EB	LT	1.00	65.6	E	0.61	21.5	C	0.94	36.6	D	0.55	16.6	B
	WB	TR	1.05	59.6	E	0.79	24.3	C	0.85	24.3	C	0.74	21.8	C
Overall Intersection		-		**61.1**	**E**		**23.4**	**C**		**28.7**	**C**		**20.2**	**C**
Winthrop Street and Albany Avenue														
Winthrop Street	EB	LTR	0.57	22.8	C	0.43	25.6	C	0.70	27.6	C	0.51	27.4	C
	WB	LTR	1.00	28.9	C	1.04	98.0	F	1.04	63.6	E	0.96	78.3	E
Albany Avenue	NB	LTR	1.04	36.0	D	0.78	22.0	C	0.97	39.9	D	0.68	15.9	B
		(R)	0.16	6.0	A									
	SB	LTR	0.61	14.4	B	0.53	15.9	B	0.68	16.0	B	0.53	15.6	B
Overall Intersection		-		**25.8**	**C**		**42.8**	**D**		**36.2**	**D**		**34.0**	**C**
Unsignalized														
Clarkson Avenue and East 43 Street														
Clarkson Avenue	EB	T	0.25	0.0	A	0.17	0.0	A	0.30	0.0	A	0.16	0.0	A
	WB	T	0.33	0.0	A	0.22	0.0	A	0.27	0.0	A	0.19	0.0	A
East 43 Street	NB	LR	0.41	23.3	C	0.10	13.3	B	0.21	17.5	C	0.08	12.2	B
Overall Intersection		-		**2.8**	**A**		**0.9**	**A**		**1.3**	**A**		**0.8**	**A**
Clarkson Avenue and East 42 Street														
Clarkson Avenue	EB	TR	0.28	0.0	A	0.16	0.0	A	0.33	0.0	A	0.17	0.0	A
	WB	L	0.04	0.6	A	0.02	0.4	A	0.07	1.3	A	0.04	1.0	A
		T	0.34	0.0	A	0.21	0.0	A	0.23	0.0	A	0.19	0.0	A
Overall Intersection		-		**0.4**	**A**		**0.2**	**A**		**0.6**	**A**		**0.5**	**A**

1 "Mvt." refers to the specific intersection approach lane(s) and how the lane(s) operate and/or specific pavement striping. TR is a combined through-right turn lane(s), R or L refers to exclusive right- or left-turn movement lane(s), and LTR is a mixed lane(s) that allows for all movement types.

2 V/C is the volume-to-capacity ratio for the Mvt. listed in the first column. Values above 1.0 indicate an excess of demand over capacity.

3 Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group listed in the Mvt. Column as noted in the 2000 HCM - TRB.

4 The delay calculations for signalized intersections represent the average control delay experienced by all vehicles that arrive in the analysis period, including delays incurred beyond the analysis period when the lane group is saturated.

5 LOS for unsignalized intersections is based upon total average delay per vehicle (sec/veh) for each lane group listed in the Mvt. column as noted in the 2000 HCM - TRB.

Source: STV Incorporated, 2023.

THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO ACTION CONDITIONS)

This section establishes the baseline (No Action) conditions against which potential significant adverse impacts of the Proposed Project can be compared. No Action traffic volumes for the 2031 analysis year are established by applying an annual background traffic growth rate based on *CEQR Technical Manual* guidelines, and then adding vehicular volumes expected to be generated by developments to be completed and occupied prior to 2031.

Future No Action Traffic Growth

Background Growth

The assumed annual background growth rate for this section of Brooklyn is 0.5 percent for Years 1 to 5, and 0.25 percent for Year 6 and beyond, as recommended by the *CEQR Technical Manual*. The total compounded background growth rate for 2031 is approximately three percent (0.5 percent annual growth for five years from 2023 through 2028, and 0.25 percent growth for three years from 2028 through 2031).

The following No Action projects discussed in Chapter 2, "Land Use, Zoning, and Public Policy," would result in development densities less than the levels shown in Table 16-1 of the *CEQR Technical Manual*. Trips associated with these developments would not likely cause significant adverse impacts and not require quantitative detailed analysis; therefore, trip generation from these No Action Projects are assumed to be included within the background growth rate.

- 906 East New York Avenue
- 500 Kingston Avenue
- 102-110 East 53rd Street
- 643 Midwood Street
- 76 East 53rd Street
- 577 Maple Street
- 329 Clarkson Avenue (Clarkson Estates)

BACKGROUND DEVELOPMENT PROJECTS

Traffic Volumes – The 2031 No Action conditions also include trips anticipated to be generated by the proposed Vital Brooklyn Initiative Kingsbrook Estates and Utica Crescent developments on the Kingsbrook Jewish Medical Center property. Trips associated with these two development projects have been

assigned and added to the 2031 No Action traffic network based on the *Vital Brooklyn Sites EFGH (Kingsbrook Estates) and K (Utica Crescent) Environmental Assessment [2022].*[5]

Roadway Improvements – Proposed traffic mitigation at the intersection of Winthrop Street and Utica Avenue is included in the 2031 No Action traffic analysis as per the Vital Brooklyn Sites EFGH *(Kingsbrook Estates) and K (Utica Crescent) Environmental Assessment [2022]*. This mitigation measure includes eliminating on-street parking spaces for 85 feet on the north and south sides of the eastbound and westbound approaches to add individual east and westbound left-turn lanes.

Intersection Capacity Analysis

Expected No Action LOS are determined for 2031 based on the projected increases in traffic volumes and physical changes to the roadway network. Figure 14-8, "2031 No Action Traffic Volumes - Weekday AM Peak Hour," Figure 14-9, "2031 No Action Traffic Volumes - Weekday Midday Peak Hour," Figure 14-10, "2031 No Action Traffic Volumes - Weekday PM Peak Hour," and Figure 14-11, "2031 No Action Traffic Volumes - Saturday Midday Peak Hour," show the No Action traffic volumes during analysis hours. Table 14-10, "2031 No Action Conditions," lists the LOS projected for the study area intersections during the No Action weekday AM, midday, PM, and Saturday midday peak hours.

The analyses show that the majority of the intersections in the Project study area would operate at acceptable levels during the weekday AM, midday, PM, and Saturday midday peak analysis hours — with overall operations at LOS D or better. Those intersection and movements that would experience a change in LOS to E or F conditions as compared to Existing conditions include:

- The eastbound approach at the intersection of Clarkson Avenue at Utica Avenue would continue to operate at LOS F during the AM and PM peak hours. The westbound approach would continue to operate at LOS F during the AM peak hour and deteriorate from LOS E to F during the PM peak hour. The northbound Utica Avenue through movement would worsen from LOS D to E during the AM peak hour and would continue to operate at LOS E during the Saturday midday peak hour. The southbound through movement would deteriorate from LOS D to E during the Saturday midday peak hour.
- The intersection of Clarkson Avenue and Albany Avenue would deteriorate from LOS D to E during the AM peak hour. The eastbound left-turn movement would continue to operate at LOS F during the AM peak hour. The westbound shared through/right-turn movement would deteriorate from

[5] The Environmental Assessment prepared for the Proposed Vital Brooklyn Sites EFGH (Kingsbrook Estates) and K (Utica Crescent) developments analyzed a development program (e.g., total numbers of units, total floor area by use) that may be slightly greater than what would be analyzed in subsequent GPPs prepared for these projects. The transportation analyses prepared herein for the Kingsboro Psychiatric Center Mixed Use Project EIS assumes the development program assessed in the Environmental Assessment prepared for these projects. As the Environmental Assessment assumes a larger development program and subsequently projects a higher number of project-generated trips, this analysis approach would therefore be considered a conservative one.

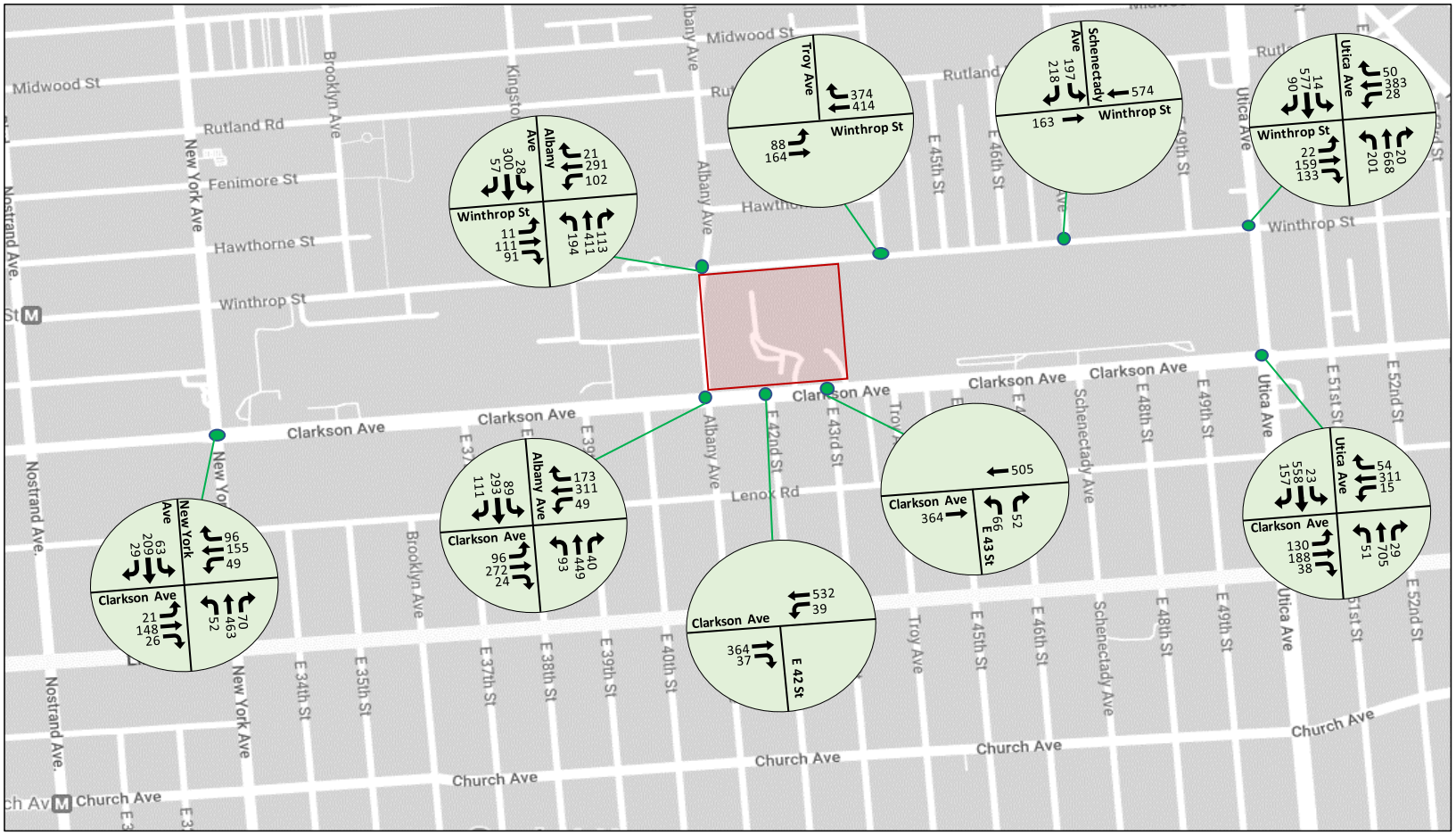
LOS E to F during the AM peak hour. Additionally, the southbound approach would deteriorate from LOS D to E during the PM peak hour.

- At the intersection of Clarkson Avenue and New York Avenue, westbound shared through/right-turn movement would continue to operate at LOS F during the AM peak hour and would deteriorate from LOS D to E during the PM peak hour. Additionally, the eastbound approach would deteriorate from LOS D to E during the PM peak hour.

- The intersection of Winthrop Street and Utica Avenue would deteriorate from LOS D to F during the AM peak hour as the northbound through movement would deteriorate to LOS F conditions. The southbound Utica Avenue through movement would deteriorate from LOS D to E during the Saturday midday peak hour.

- The intersection of Winthrop Street at Troy Avenue would deteriorate from an overall LOS E to F during the AM peak hour as the eastbound approach would worsen from LOS E to F during this period. The eastbound approach would also decline from LOS D to E during the PM peak hour.

- The westbound Winthrop Street approach at Albany Avenue would deteriorate from LOS C to F conditions during the weekday AM peak hour, worsen within LOS F conditions during the weekday midday peak hour, and from LOS E to F during the weekday PM and Saturday midday peak hours.



Project Site

0 0.25 0.5 Miles

Source: Esri; STV Incorporated, 2023

N

Figure 14-8

2031 No Action Traffic Volumes - Weekday AM Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project

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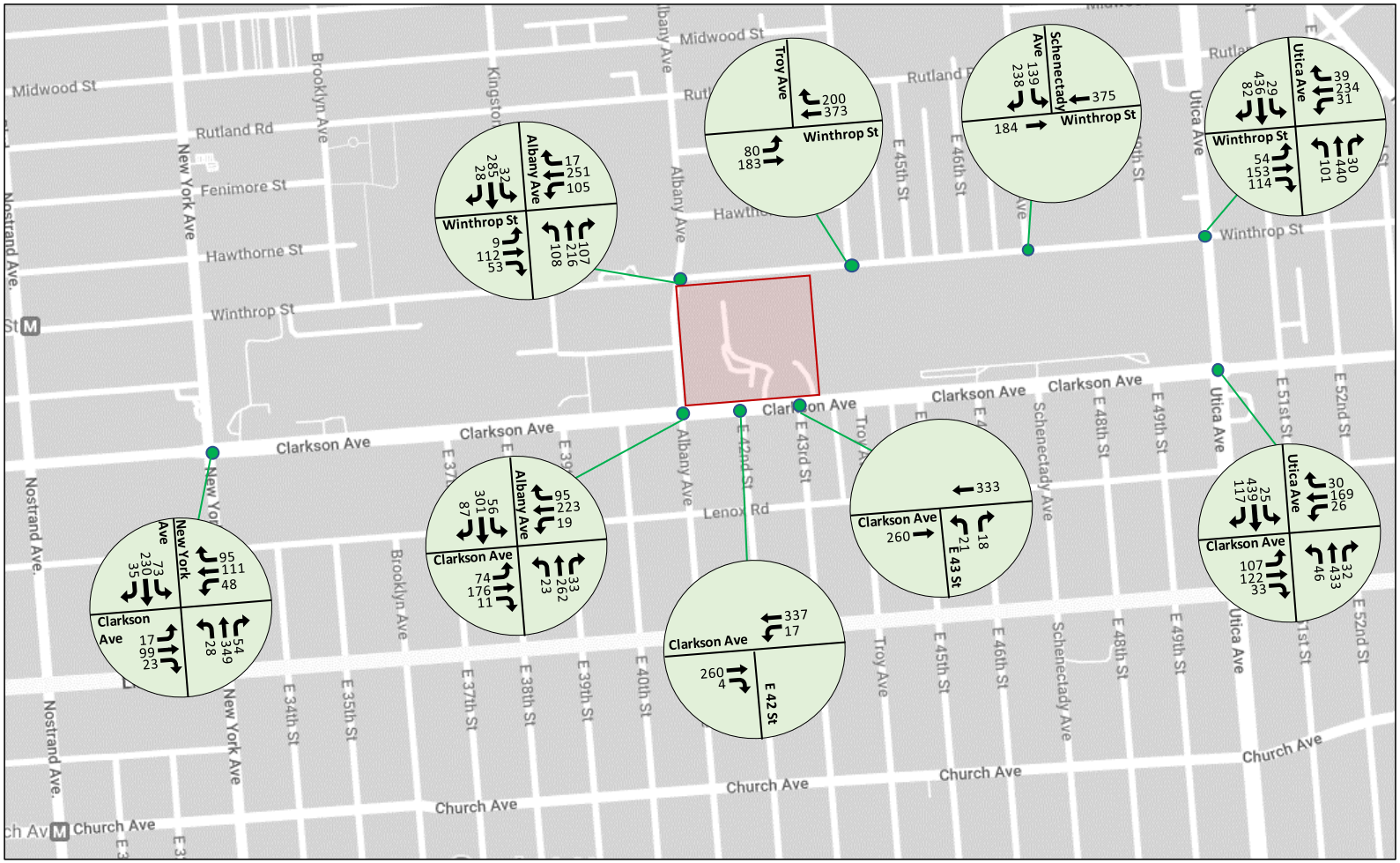


Project Site

0 0.25 0.5 Miles

Source: Esri; STV Incorporated, 2023

N

Figure 14-9

2031 No Action Traffic Volumes - Weekday Midday Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project

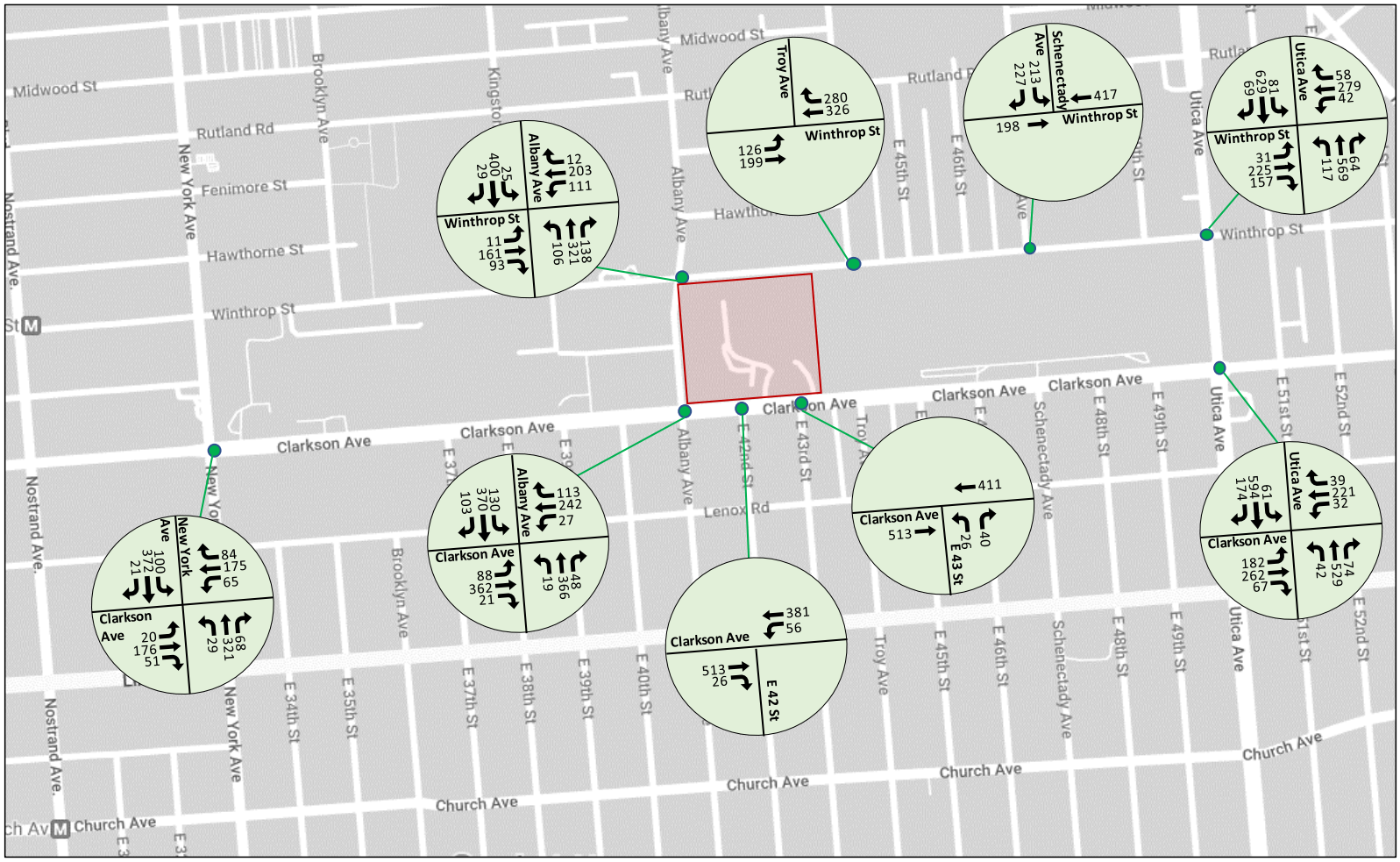
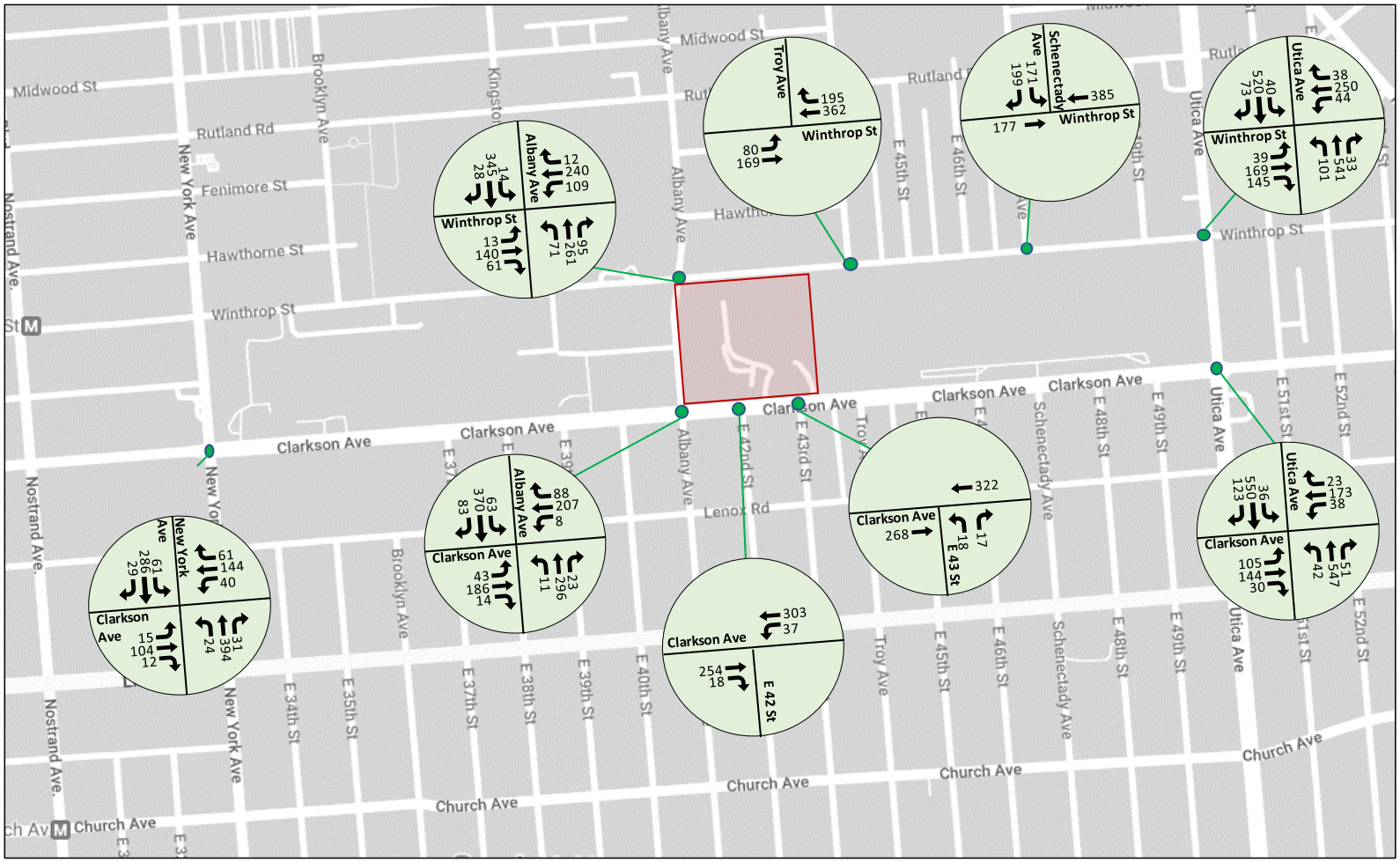


Figure 14-10

2031 No Action Traffic Volumes - Weekday PM Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project



Project Site

0 0.25 0.5 Miles

Source: Esri; STV Incorporated, 2023

N

Figure 14-11

2031 No Action Traffic Volumes - Saturday Midday Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project

Table 14-10: 2031 No Action Conditions

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			MD Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Signalized														
Clarkson Avenue and Utica Avenue														
Clarkson Avenue	EB	L	1.12	141.7	F	0.37	18.7	B	1.05	110.9	F	0.37	18.4	B
		TR	1.15	135.0	F	0.38	17.4	B	1.09	104.9	F	0.40	17.6	B
	WB	LTR	1.09	99.8	F	0.62	23.1	C	1.01	84.4	F	0.59	22.4	C
Utica Avenue	NB	L	0.29	15.9	B	0.28	16.2	B	0.24	14.8	B	0.46	26.4	C
		T	1.06	71.3	E	0.91	38.8	D	0.78	25.9	C	1.07	77.3	E
		R	0.05	11.2	B	0.08	12.1	B	0.13	11.9	B	0.13	12.5	B
	SB	L	0.20	11.9	B	0.16	9.6	A	0.30	14.3	B	0.39	15.2	B
		T	0.87	26.7	C	0.88	26.1	C	0.82	20.6	C	1.07	62.1	E
		R	0.24	10.3	B	0.25	9.4	A	0.28	13.2	B	0.29	9.4	A
Overall Intersection		-		**69.9**	**E**		**25.6**	**C**		**49.0**	**D**		**47.9**	**D**
Clarkson Avenue and Albany Avenue														
Clarkson Avenue	EB	L	1.07	124.0	F	0.49	32.5	C	0.58	30.2	C	0.25	23.9	C
		TR	0.80	32.8	C	0.39	24.5	C	0.87	38.9	D	0.44	25.3	C
	WB	L	0.30	19.4	B	0.07	20.3	C	0.20	17.5	B	0.03	19.7	B
		TR	1.09	84.9	F	0.79	38.7	D	0.87	39.4	D	0.66	31.7	C
Albany Avenue	NB	LTR	1.02	54.9	D	0.45	14.4	B	0.67	15.6	B	0.44	14.0	B
	SB	LTR	0.95	35.3	D	0.67	13.4	B	1.04	57.7	E	0.76	16.0	B
Overall Intersection		-		**56.6**	**E**		**22.5**	**C**		**38.8**	**D**		**20.4**	**C**
Clarkson Avenue and New York Avenue														
Clarkson Avenue	EB	LTR	0.70	31.7	C	0.50	32.4	C	0.92	56.9	E	0.43	30.3	C
	WB	L	0.30	21.4	C	0.25	27.8	C	0.48	27.8	C	0.18	26.1	C
		TR	1.07	94.3	F	0.73	42.9	D	0.94	59.9	E	0.73	43.0	D
New York Avenue	NB	LTR	0.96	41.9	D	0.66	21.2	C	0.69	18.7	B	0.60	19.2	B
	SB	LTR	0.66	18.8	B	0.64	21.5	C	0.91	36.2	D	0.60	19.8	B
Overall Intersection		-		**44.6**	**D**		**26.6**	**C**		**38.4**	**D**		**25.0**	**C**
Winthrop Street and Utica Avenue														
Winthrop Street	EB	L	0.27	28.6	C	0.19	12.3	B	0.18	22.5	C	0.13	11.6	B
		TR	0.74	36.6	D	0.52	16.0	B	0.86	45.0	D	0.57	17.0	B
	WB	L	0.20	24.0	C	0.12	11.5	B	0.30	26.2	C	0.16	12.0	B
		TR	0.89	47.0	D	0.49	15.3	B	0.65	30.8	C	0.49	15.2	B
Utica Avenue	NB	L	0.78	23.2	C	0.48	16.7	B	0.68	18.9	B	0.79	27.4	C
		T	1.71	347.1	F	0.73	18.6	B	0.76	13.6	B	0.89	22.0	C
		R	0.03	10.7	B	0.06	8.6	A	0.10	7.3	A	0.06	7.5	A
	SB	L	0.07	9.9	A	0.16	12.4	B	0.41	17.3	B	0.33	17.4	B
		T	0.86	29.9	C	0.86	32.3	C	0.93	39.7	D	1.03	63.7	E
		R	0.14	10.0	A	0.19	11.9	B	0.11	10.3	B	0.14	11.3	B
Overall Intersection		-		**118.4**	**F**		**19.7**	**B**		**28.4**	**C**		**30.0**	**C**

Table 14-10: 2031 No Action Conditions (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			MD Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Winthrop Street and Schenectady Avenue														
Winthrop Street	EB	T	0.27	9.0	A	0.27	11.7	B	0.27	9.0	A	0.25	11.5	B
	WB	T	0.80	20.5	C	0.56	16.1	B	0.57	12.9	B	0.51	15.0	B
Schenectady Avenue	SB	L	0.46	19.3	B	0.30	23.0	C	0.46	19.3	B	0.34	23.5	C
		R	0.54	21.6	C	0.57	28.9	C	0.59	22.7	C	0.48	26.5	C
Overall Intersection		-		**18.7**	**B**		**19.4**	**B**		**15.8**	**B**		**18.5**	**B**
Winthrop Street and Troy Avenue														
Winthrop Street	EB	LT	1.21	140.2	F	0.68	24.0	C	1.07	68.6	E	0.63	18.2	B
	WB	TR	1.09	73.8	E	0.83	26.8	C	0.89	28.1	C	0.78	23.5	C
Overall Intersection		-		**90.7**	**F**		**25.9**	**C**		**42.6**	**D**		**21.9**	**C**
Winthrop Street and Albany Avenue														
Winthrop Street	EB	LTR	0.60	23.9	C	0.46	26.1	C	0.75	29.8	C	0.55	28.4	C
	WB	LTR	1.14	83.5	F	1.12	123.5	F	1.13	91.5	F	1.04	98.1	F
Albany Avenue	NB	LTR	1.08	54.8	D	0.81	24.0	C	1.01	47.6	D	0.70	16.5	B
		(R)	0.17	6.0	A									
	SB	LTR	0.65	15.4	B	0.55	16.3	B	0.70	16.5	B	0.54	15.8	B
Overall Intersection		-		**45.8**	**D**		**51.4**	**D**		**45.4**	**D**		**39.9**	**D**
Unsignalized														
Clarkson Avenue and East 43 Street														
Clarkson Avenue	EB	T	0.26	0.0	A	0.18	0.0	A	0.31	0.0	A	0.17	0.0	A
	WB	T	0.34	0.0	A	0.23	0.0	A	0.28	0.0	A	0.20	0.0	A
East 43 Street	NB	LR	0.45	25.3	D	0.10	13.6	B	0.23	18.4	C	0.08	12.5	B
Overall Intersection		-		**3.1**	**A**		**0.9**	**A**		**1.3**	**A**		**0.8**	**A**
Clarkson Avenue and East 42 Street														
Clarkson Avenue	EB	TR	0.28	0.0	A	0.16	0.0	A	0.34	0.0	A	0.18	0.0	A
	WB	L	0.04	0.6	A	0.02	0.4	A	0.07	1.3	A	0.04	1.0	A
		T	0.35	0.0	A	0.22	0.0	A	0.24	0.0	A	0.20	0.0	A
Overall Intersection		-		**0.4**	**A**		**0.2**	**A**		**0.6**	**A**		**0.5**	**A**

Source: STV Incorporated, 2023.

THE FUTURE WITH THE PROPOSED ACTIONS (WITH ACTION CONDITIONS)

Project Traffic Volume Increment

As listed in Table 14-3, "Travel Demand Forecast," there would be a total of approximately 248 additional vehicle trips during the weekday AM peak hour, 145 during the midday peak hour, 270 during the PM peak hour, and 209 vehicle trips during the Saturday midday peak hour. Auto and taxi trips were assigned to the street network based on the location of the projected development and the anticipated origins and destinations of vehicle trips associated with the different uses projected for the Project Site (e.g., community facility, residential, etc.). Truck trips were assigned to designated through and local truck routes to provide access to the Project Site.

Net incremental peak hour vehicle trips were assigned to intersections to be analyzed within the traffic study area, as illustrated on Figure 14-12, "2031 With Action Traffic Volume Increments - Weekday AM Peak Hour," Figure 14-13, "2031 With Action Traffic Volume Increments - Weekday Midday Peak Hour," Figure 14-14, "2031 With Action Traffic Volume Increments - Weekday PM Peak Hour," and Figure 14-15, "2031 With Action Traffic Volume Increments - Saturday Midday Peak Hour."

The Proposed Project would create vehicular access points along Winthrop Street at its intersections with East 42nd and East 43rd streets, and along Clarkson Avenue at East 43rd Street (see Figure 14-16, "Site Plan"). A new privately owned driveway would be constructed along East 43rd Street and would provide one-way northbound traffic flow between Clarkson Avenue and Winthrop Street with curbside parking/loading areas. A second private driveway entrance would be provided on Winthrop Street west of East 43rd Street that would serve a 200-foot-long cul-de-sac driveway. Each driveway would provide stop control at the northbound approach to Winthrop Street.

Figure 14-17, "With Action Traffic Volumes - Weekday AM Peak Hour," Figure 14-18, "With Action Traffic Volumes - Weekday Midday Peak Hour," Figure 14-19, "With Action Traffic Volumes - Weekday PM Peak Hour," and Figure 14-20, "With Action Traffic Volumes - Saturday Midday Peak Hour," show the total weekday AM, midday, PM, and Saturday midday traffic volumes in the 2031 future with the Proposed Project. The volumes shown are the combination of the existing volumes and net incremental traffic generated by the Proposed Project and the No Action volumes.

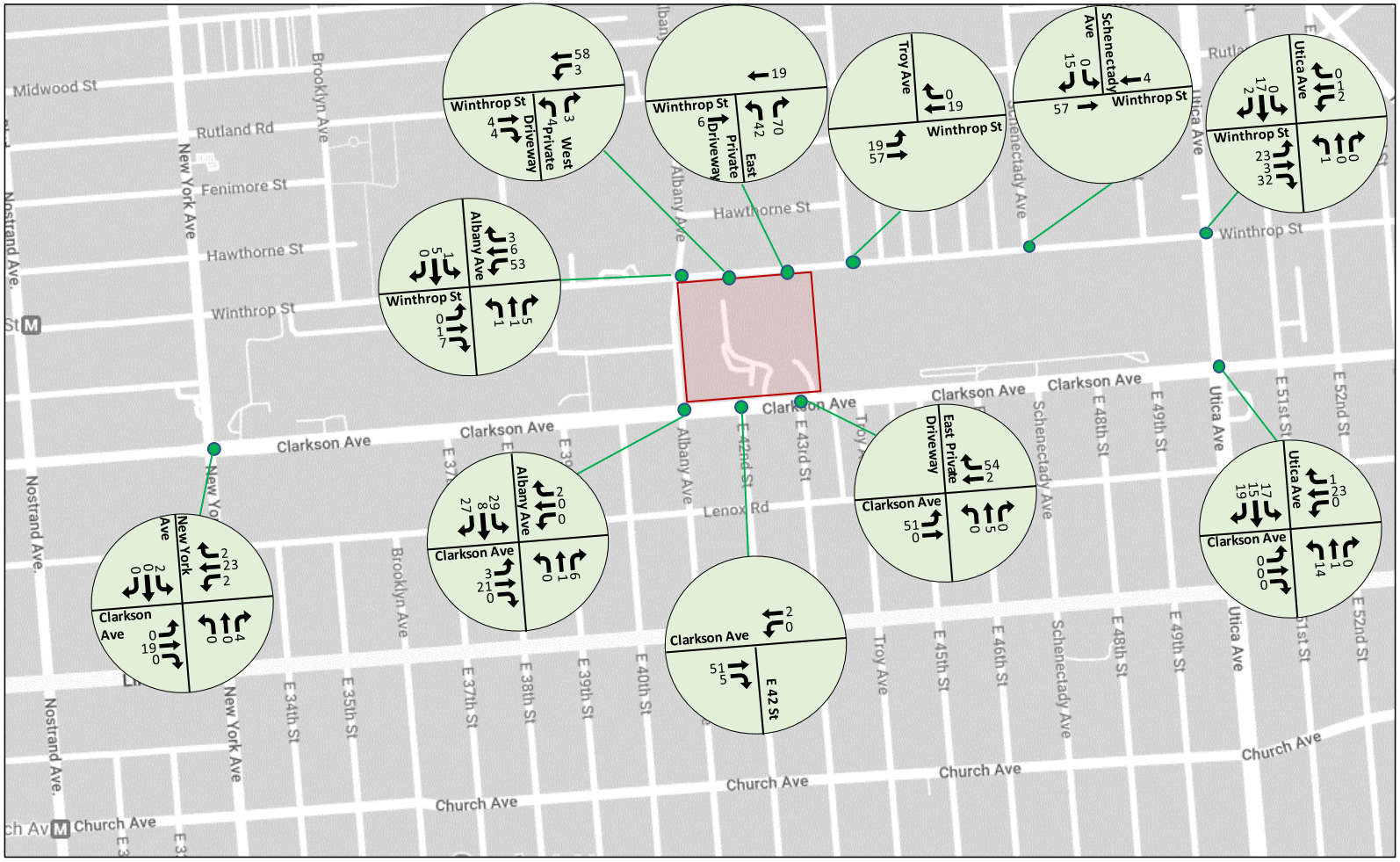
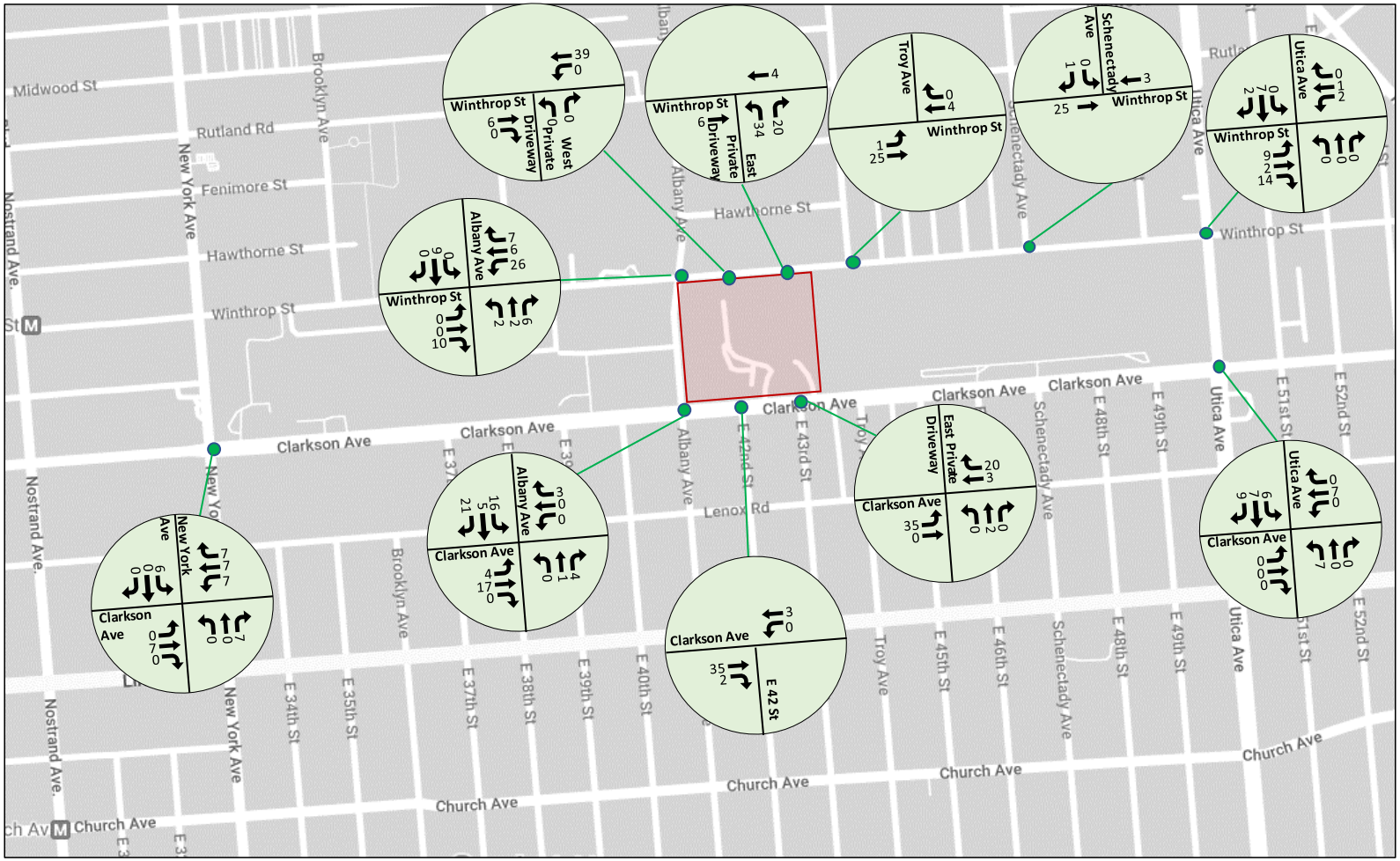


Figure 14-12
2031 With Action Traffic Volume Increments - Weekday AM Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project



Source: Esri; STV Incorporated, 2023

Figure 14-13

2031 With Action Traffic Volume Increments - Weekday Midday Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project

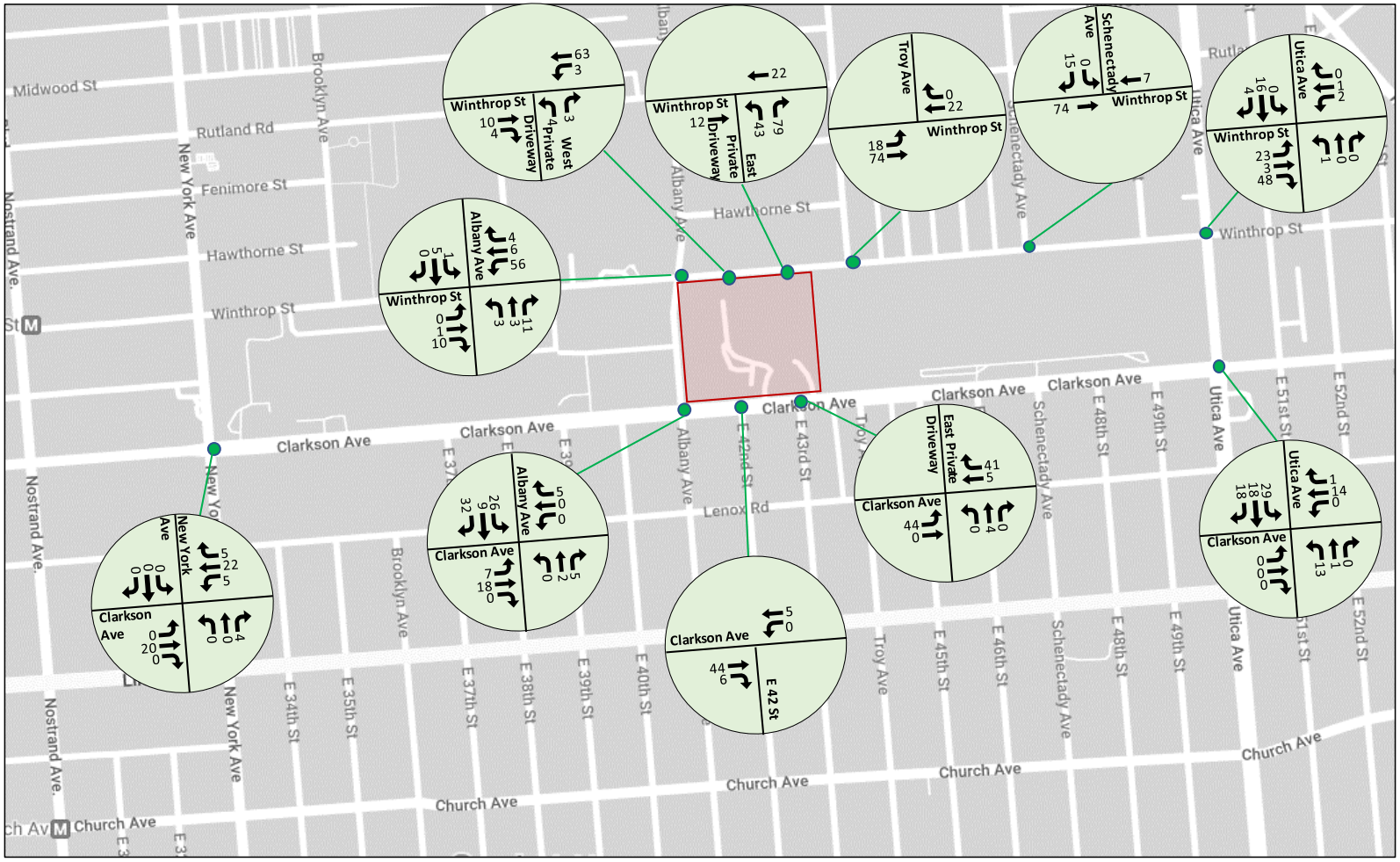


Figure 14-14

2031 With Action Traffic Volume Increments - Weekday PM Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project

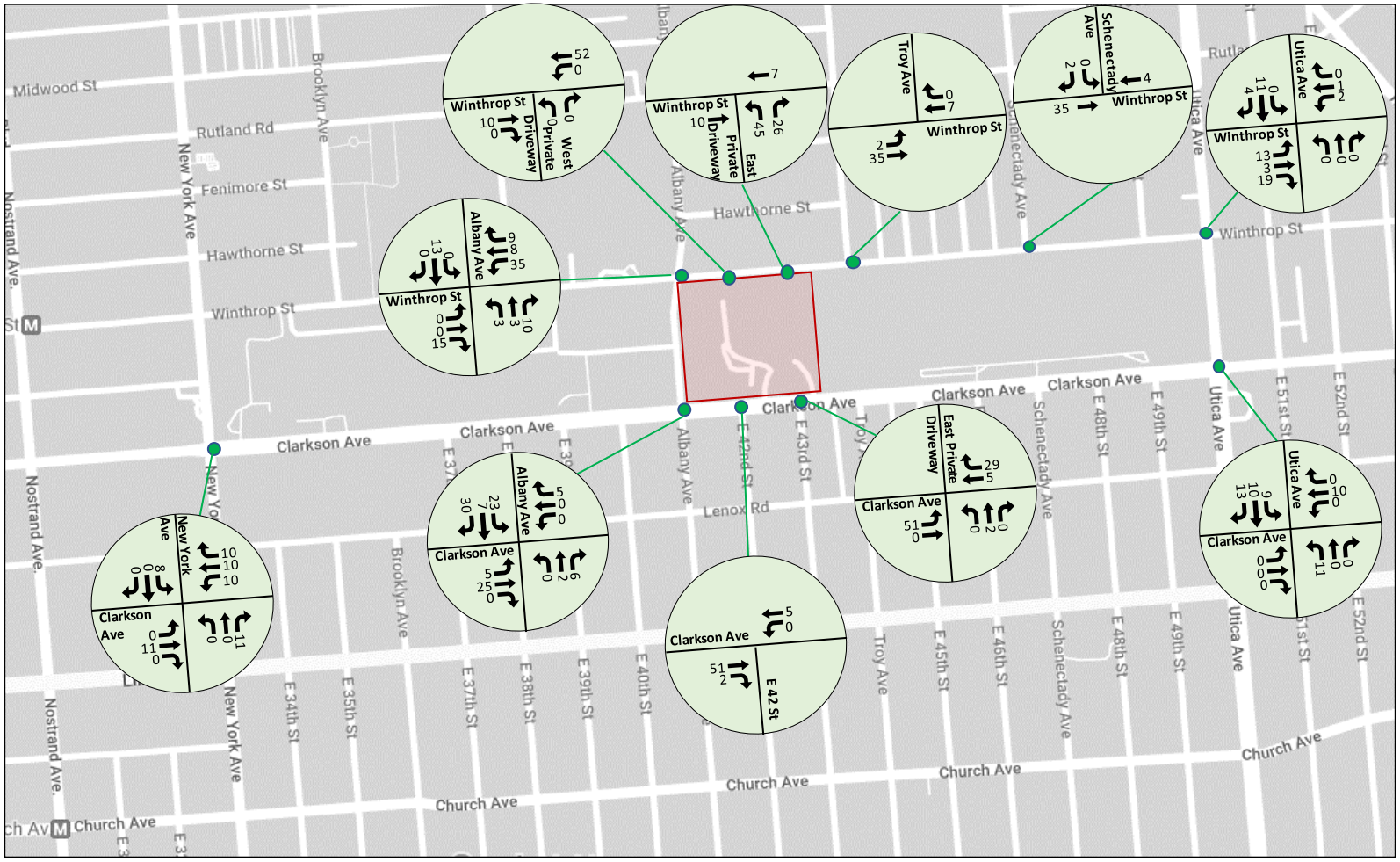


Figure 14-15

2031 With Action Traffic Volume Increments - Saturday Midday Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project

Figure - 14-16
Site Plan

Source: Douglaston Development, 2023

N

Kingsboro Psychiatric Center Mixed-Use Project

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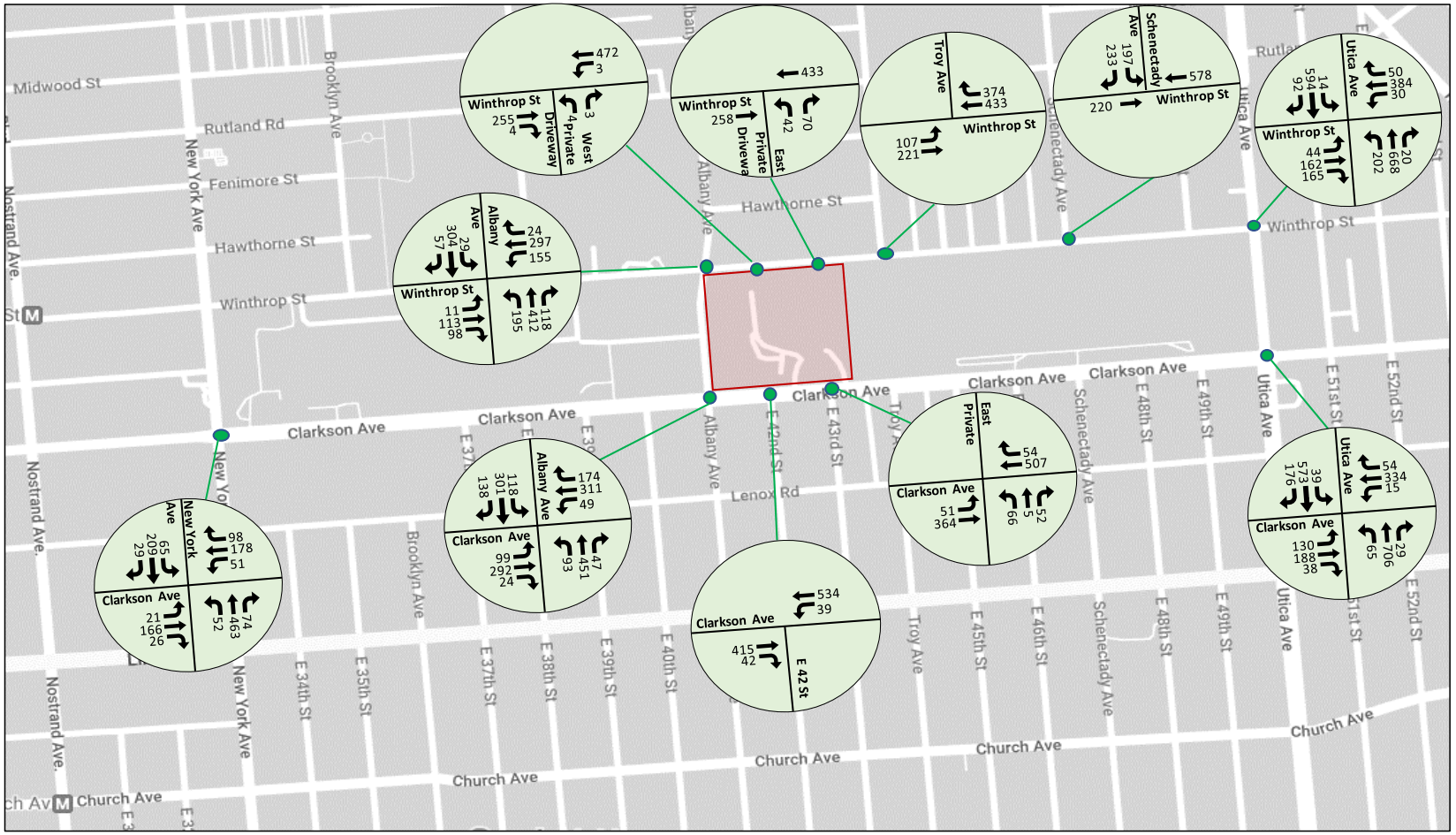
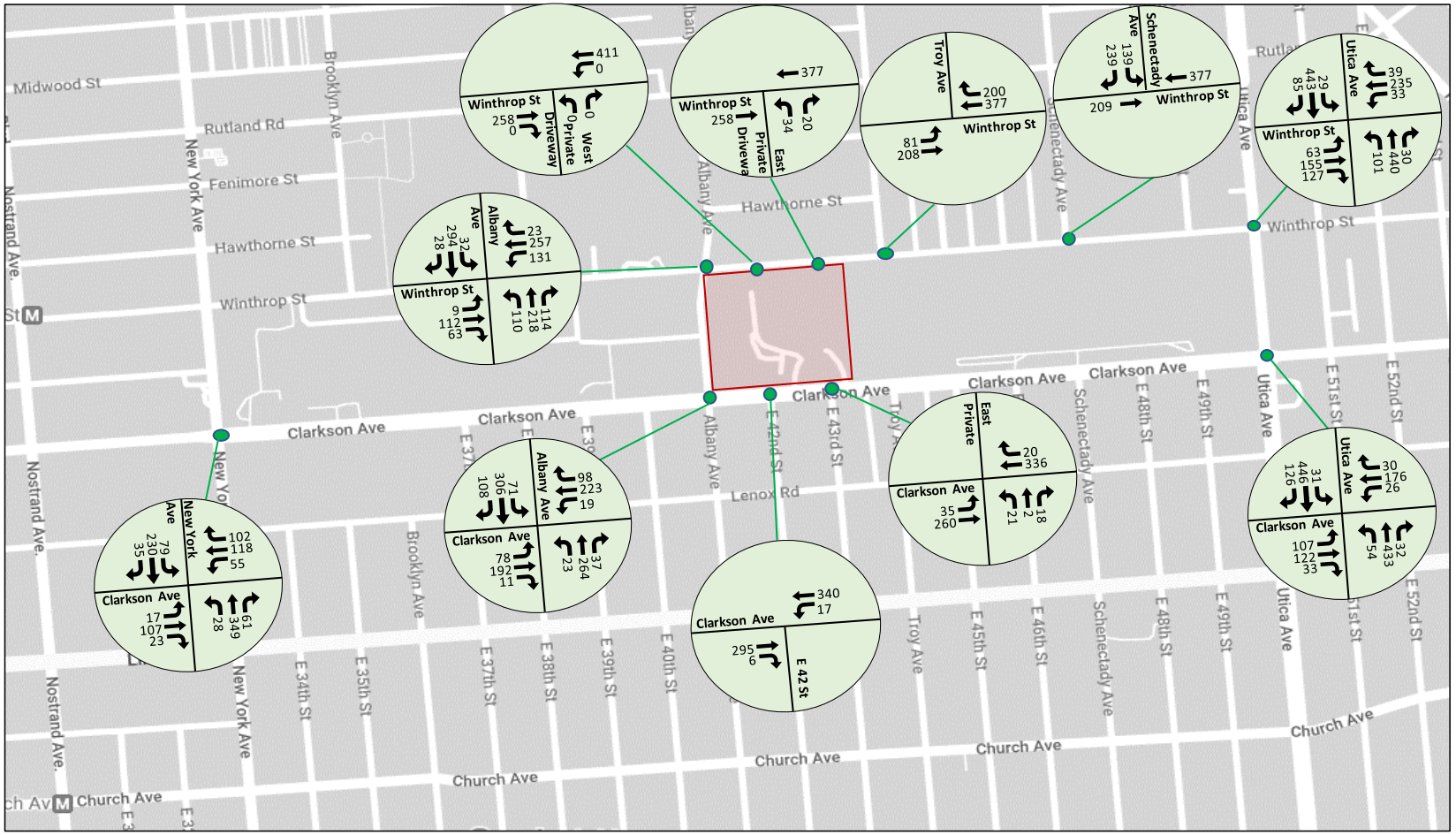


Source: Esri; STV Incorporated, 2023

Figure 14-17

2031 With Action Traffic Volumes - Weekday AM Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project



Project Site

0 0.25 0.5 Miles

Source: Esri; STV Incorporated, 2023

N

Figure 14-18

2031 With Action Traffic Volumes - Weekday Midday Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project

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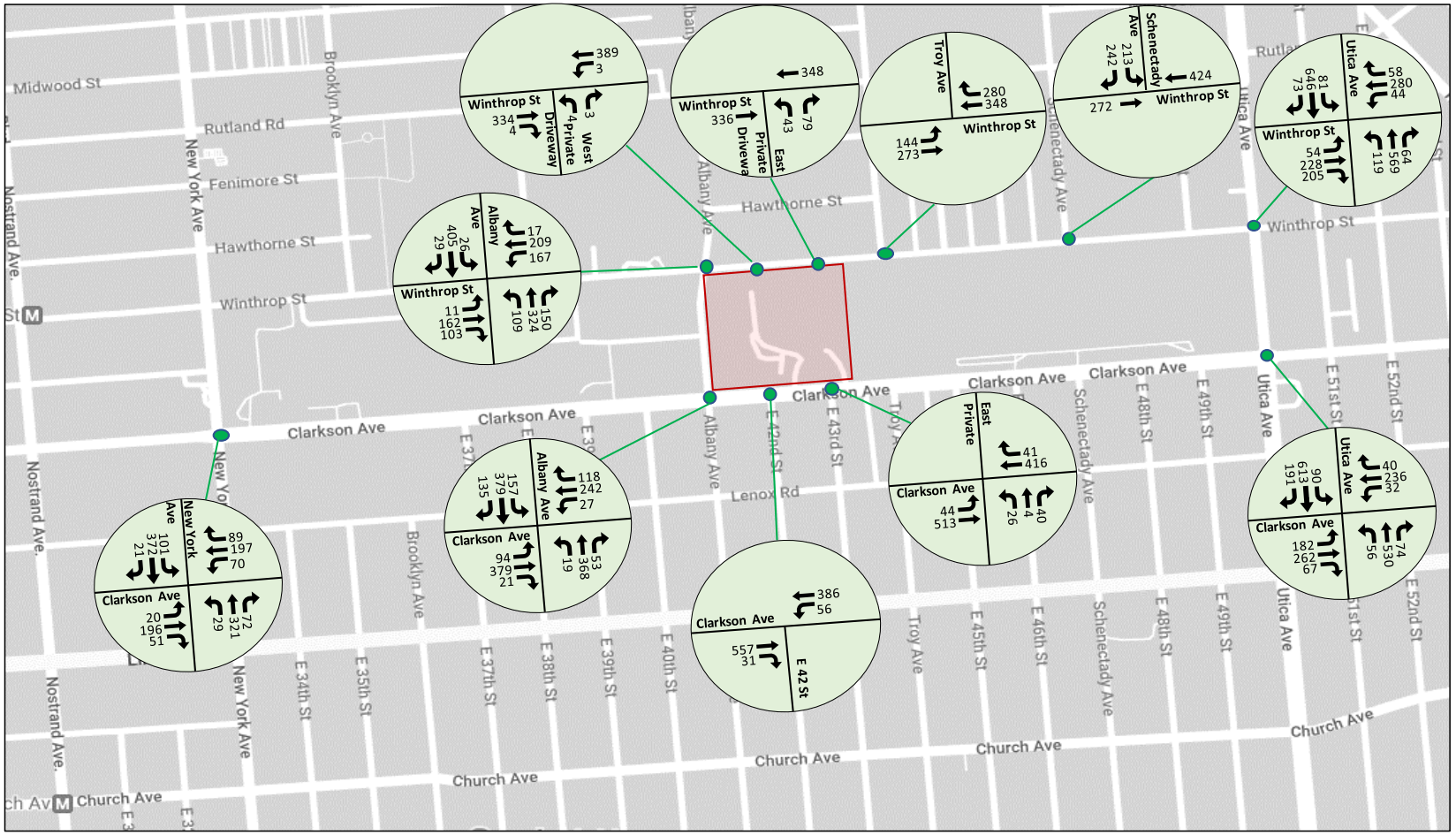
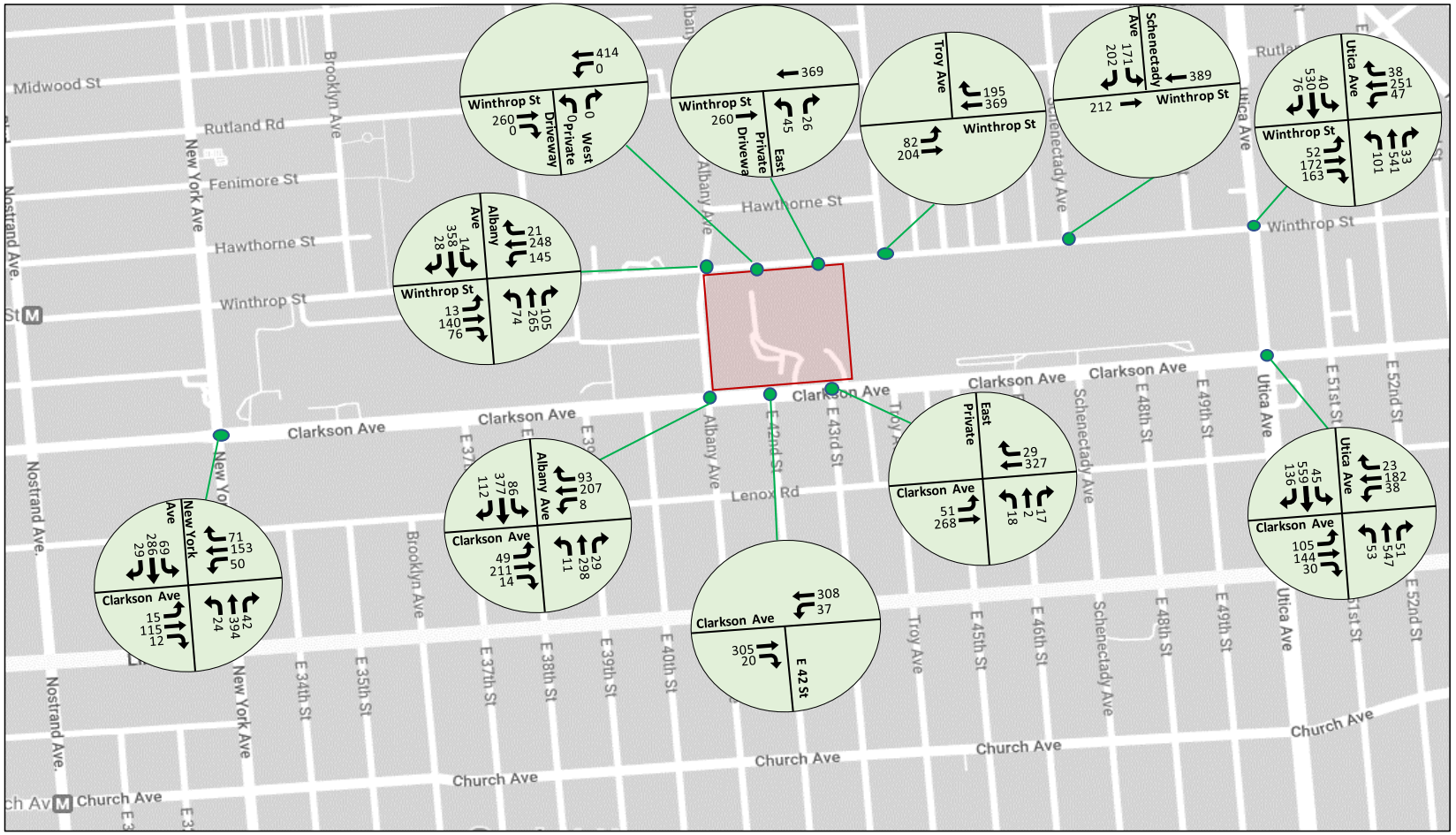


Source: Esri; STV Incorporated, 2023

Figure 14-19

2031 With Action Traffic Volumes - Weekday PM Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project



Project Site

0 0.25 0.5 Miles

Source: Esri; STV Incorporated, 2023

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Figure 14-20

2031 With Action Traffic Volumes - Saturday Midday Peak Hour

Kingsboro Psychiatric Center Mixed-Use Project

Intersection Capacity Analysis

Table 14-9, "2031 With Action Conditions," lists the expected With Action LOS projected for the study area intersections during the weekday AM, midday, PM, and Saturday midday peak hours.

The analyses show that several of the intersections in the Project study area would operate at acceptable levels during the weekday AM, midday, PM, and Saturday midday peak analysis hours — with overall operations at LOS D or better (see Table 14-11, "2031 With Action Conditions"). However, the following intersection movements would experience a significant adverse traffic impact based on a deteriorating LOS from the No Action conditions:

- At the intersection of Clarkson Avenue and Utica Avenue, the eastbound Clarkson Avenue left-turn movement and westbound approach would deteriorate within LOS F conditions during the AM and PM peak hours. Additionally, the southbound through movement would deteriorate within LOS E conditions during the Saturday midday peak hour.
- At the intersection of Clarkson Avenue and Albany Avenue, the eastbound Clarkson Avenue left-turn movement would deteriorate within LOS F conditions during the AM peak hour. The westbound shared through/right-turn movement would deteriorate within LOS F conditions during the AM peak hour and from LOS D to E during the PM peak hour. The northbound approach would deteriorate from LOS D to E during the AM peak hour. The southbound approach would worsen from LOS D to F during the AM peak hour and from LOS E to F during the PM peak hour.
- The westbound Clarkson Avenue shared through/right-turn movement at New York Avenue would deteriorate within LOS F during the AM peak hour and within LOS E during the PM peak hour. The eastbound approach would also deteriorate within LOS E conditions during the PM peak hour.
- The eastbound Winthrop Street shared through/right-turn movement at Utica Avenue would worsen from LOS D to E during the PM peak hour and the southbound through movement would deteriorate within LOS E conditions during the Saturday midday peak hour.
- At the intersection of Winthrop Street and Troy Avenue, the eastbound approach would deteriorate within LOS F and the westbound approach would worsen from LOS E to F during the AM peak hour. The eastbound approach would worsen from LOS E to F during the PM peak hour also.
- The westbound Winthrop Street approach at Albany Avenue would deteriorate within LOS F during the weekday AM, midday, PM, and Saturday midday peak hours. The northbound approach would deteriorate from LOS D to E during the AM and PM peak hours.
- The stop-controlled northbound East 43rd Street approach at Clarkson Avenue would deteriorate from LOS D to F during the AM peak hour.

Measures to mitigate the potential significant adverse traffic impacts, identified in Table 14-11, "2031 With Action Conditions," are discussed in Chapter 23, "Mitigation Measures."

Table 14-11: 2031 With Action Conditions

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			MD Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Signalized														
Clarkson Avenue and Utica Avenue														
Clarkson Avenue	EB	L	1.23	184.7	F	0.39	19.2	B	1.13	137.5	F	0.39	18.9	B
		TR	1.15	136.8	F	0.38	17.5	B	1.09	107.2	F	0.40	17.7	B
	WB	LTR	1.15	124.1	F	0.64	23.9	C	1.07	102.0	F	0.62	23.3	C
Utica Avenue	NB	L	0.39	18.8	B	0.34	17.8	B	0.34	17.5	B	0.58	34.2	C
		T	1.06	71.7	E	0.91	38.8	D	0.78	26.0	C	1.07	77.3	E
		R	0.05	11.2	B	0.08	I	F	0.13	12.0	B	0.13	12.6	B
	SB	L	0.35	15.5	B	0.21	10.5	B	0.45	15.4	B	0.50	18.3	B
		T	0.89	28.2	C	0.89	27.6	C	0.85	20.8	C	1.09	68.0	E
		R	0.27	11.2	B	0.28	10.0	A	0.32	13.1	B	0.33	10.3	B
Overall Intersection		-		**76.5**	**E**		**26.1**	**C**		**53.0**	**D**		**49.5**	**D**
Clarkson Avenue and Albany Avenue														
Clarkson Avenue	EB	L	1.18	164.8	F	0.57	37.2	D	0.73	44.6	D	0.33	26.5	C
		TR	0.88	41.4	D	0.47	26.2	C	0.93	47.1	D	0.49	26.5	C
	WB	L	0.34	20.7	C	0.08	20.4	C	0.22	18.3	B	0.03	19.8	B
		TR	1.21	131.3	F	0.83	43.2	D	0.97	58.6	E	0.73	36.0	D
Albany Avenue	NB	LTR	1.07	69.4	E	0.47	14.7	B	0.69	16.4	B	0.46	14.2	B
	SB	LTR	1.18	101.3	F	0.76	16.1	B	1.25	135.4	F	0.88	23.0	C
Overall Intersection		-		**91.6**	F		**24.8**	**C**		**71.5**	**E**		**24.3**	**C**
Clarkson Avenue and New York Avenue														
Clarkson Avenue	EB	LTR	0.78	38.0	D	0.53	33.1	C	0.98	68.5	E	0.46	31.0	C
	WB	L	0.33	22.3	C	0.29	28.7	C	0.54	31.2	C	0.23	27.1	C
		TR	1.15	120.5	F	0.78	46.9	D	1.03	79.7	E	0.82	50.4	D
New York Avenue	NB	LTR	0.97	44.0	D	0.67	21.6	C	0.70	19.0	B	0.62	19.6	B
	SB	LTR	0.67	19.3	B	0.68	22.8	C	0.92	37.2	D	0.64	21.0	C
Overall Intersection		-		**52.4**	**D**		**28.2**	**C**		**45.2**	**D**		**27.2**	**C**
Winthrop Street and Utica Avenue														
Winthrop Street	EB	L	0.54	43.9	D	0.22	12.8	B	0.32	25.8	C	0.17	12.1	B
		TR	0.86	47.2	D	0.55	16.8	B	1.02	77.2	E	0.62	18.5	B
	WB	L	0.25	25.7	C	0.13	11.7	B	0.41	32.2	C	0.19	12.5	B
		TR	0.89	47.4	D	0.49	15.3	B	0.66	30.9	C	0.49	15.3	B
Utica Avenue	NB	L	0.82	24.8	C	0.50	17.2	B	0.74	21.6	C	0.84	32.7	C
		T	1.71	347.1	F	0.73	18.6	B	0.76	13.3	B	0.89	21.9	C
		R	0.03	10.7	B	0.06	8.6	A	0.10	7.3	A	0.06	7.6	A
	SB	L	0.07	9.9	A	0.16	12.5	B	0.42	17.6	B	0.33	17.6	B
		T	0.88	32.5	C	0.87	33.7	C	0.96	44.5	D	1.05	70.0	E
		R	0.15	10.1	B	0.20	12.0	B	0.13	10.4	B	0.15	11.5	B
Overall Intersection		-		**118.1**	**F**		**20.2**	**C**		**36.0**	**D**		**32.0**	**C**

Table 14-11: 2031 With Action Conditions (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			MD Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Winthrop Street and Schenectady Avenue														
Winthrop Street	EB	T	0.36	9.9	A	0.30	12.1	B	0.37	10.1	B	0.30	12.1	B
	WB	T	0.81	20.7	C	0.56	16.2	B	0.58	13.1	B	0.51	15.1	B
Schenectady Avenue	SB	L	0.46	19.3	B	0.30	23.0	C	0.46	19.3	B	0.34	23.5	C
		R	0.58	22.6	C	0.57	29.0	C	0.63	23.9	C	0.49	26.6	C
Overall Intersection		-		**18.7**	**B**		**19.4**	**B**		**16.0**	**B**		**18.5**	**B**
Winthrop Street and Troy Avenue														
Winthrop Street	EB	LT	1.93	450.6	F	0.73	26.6	C	1.48	245.6	F	0.70	21.5	C
	WB	TR	1.11	81.3	F	0.83	27.3	C	0.92	31.7	C	0.79	24.1	C
Overall Intersection		-		**192.7**	**F**		**27.1**	**C**		**119.1**	**F**		**23.2**	**C**
Winthrop Street and Albany Avenue														
Winthrop Street	EB	LTR	0.74	31.7	C	0.51	27.8	C	0.89	46.1	D	0.64	32.0	C
	WB	LTR	1.60	289.1	F	1.35	215.8	F	1.63	307.9	F	1.36	222.7	F
Albany Avenue	NB	LTR	1.11	65.6	E	0.85	26.7	C	1.07	63.4	E	0.75	18.4	B
		(R)	0.18	6.1	A									
	SB	LTR	0.67	16.2	B	0.56	16.7	B	0.71	17.2	B	0.56	16.2	B
Overall Intersection		-		**106.2**	**F**		**82.2**	**F**		**107.8**	**F**		**77.8**	**E**
Unsignalized														
Clarkson Avenue and East 43 Street														
Clarkson Avenue	EB	L	0.07	1.2	A	0.04	1.1	A	0.05	0.8	A	0.05	1.5	A
		T	0.26	0.0	A	0.18	0.0	A	0.31	0.0	A	0.17	0.0	A
	WB	TR	0.38	0.0	A	0.24	0.0	A	0.31	0.0	A	0.22	0.0	A
East 43 Street	NB	LTR	0.74	60.6	F	0.14	17.2	C	0.36	29.1	D	0.12	16.2	C
Overall Intersection		-		**7.4**	**A**		**1.5**	**A**		**2.4**	**A**		**1.6**	**A**
Clarkson Avenue and East 42 Street														
Clarkson Avenue	EB	TR	0.32	0.0	A	0.19	0.0	A	0.37	0.0	A	0.21	0.0	A
	WB	L	0.05	0.6	A	0.02	0.4	A	0.08	1.4	A	0.04	1.0	A
		T	0.35	0.0	A	0.22	0.0	A	0.24	0.0	A	0.20	0.0	A
Overall Intersection		-		**0.3**	**A**		**0.2**	**A**		**0.6**	**A**		**0.5**	**A**
Winthrop St. and Private Acces Drive East														
Winthrop Street	EB	T	0.16	0.0	A	0.16	0.0	A	0.21	0.0	A	0.17	0.0	A
	WB	T	0.28	0.0	A	0.24	0.0	A	0.22	0.0	A	0.24	0.0	A
Private Acces Drive East	NB	LR	0.22	13.4	B	0.12	13.2	B	0.25	14.0	B	0.16	13.6	B
Overall Intersection		-		**1.9**	**A**		**1.0**	**A**		**2.1**	**A**		**1.4**	**A**
Winthrop St. and Private Acces Drive West														
Winthrop Street	EB	TR	0.17	0.0	A	0.16	0.0	A	0.22	0.0	A	0.17	0.0	A
	WB	LT	0.00	0.1	A	0.00	0.0	A	0.00	0.1	A	0.00	0.0	A
Private Acces Drive West	NB	LR	0.02	13.0	B	0.00	0.0	A	0.02	13.2	B	0.00	0.0	A
Overall Intersection		-		**0.2**	**A**		**0.0**	**A**		**0.2**	**A**		**0.0**	**A**

Source: STV Incorporated, 2023.

14.8 Transit

EXISTING CONDITIONS

Bus Service

As discussed above in Section 14.5, "Level 2 Screening Assessment," the Proposed Project is expected to exceed the 50-trip *CEQR Technical Manual* analysis threshold in the weekday AM, midday, PM, and Saturday midday peak hours for the B12 bus route and a detailed bus analysis has been performed. Detailed analyses of bus conditions for the B35, B44, and B46 bus routes are not required as the Proposed Project is projected to result in fewer than 50 peak hour trips being assigned to these bus routes (in one direction) and this level of new demand is considered unlikely to result in significant adverse impacts.

MTA's B12 bus route operates along Clarkson Avenue and Albany Avenue adjacent to the site and provides service between Prospect Lefferts Gardens and Jewel Square in East New York. The B12 bus route provides subway transfer connections to the 2 and 5 subway lines at Nostrand Avenue for the Winthrop Street Station and connections to the Q line at the Parkside Avenue Station. Table 14-12, "Existing Local Bus Analysis," lists the existing number of buses and ridership at the maximum load point in each direction for the B12 bus route in the peak hours based on September 2022 data obtained from NYCT. The 2022 ridership data ranges between 15 and 35 percent lower than pre-pandemic ridership based on the time of day; therefore, the 2022 ridership volumes were adjusted based on 2019 per-pandemic data provided by NYCT. As listed, the B12 bus route generally operates within available capacity at the maximum load points during the peak hours, except for the westbound route during the weekday AM peak hour and eastbound route during the weekday PM peak hour.

Table 14-12: Existing Local Bus Analysis

Peak Hour [1]	Route	Direction	Maximum Load Point	Peak Hour Passengers [2]	Peak Hour Buses [3]	Average Passengers Per Bus	Available Capacity [4]
Weekday AM	B12	EB	Clarkson Av & Nostrand Av	452	9	50	34
		WB	East New York Av & Troy Av	702	11	64	-108
Weekday MD	B12	EB	Clarkson Av & E 38 St	302	9	34	184
		WB	Empire Bl & Utica Av	343	9	38	143
Weekday PM	B12	EB	Lefferts Av & Schenectady Av	499	9	55	-13
		WB	Clarkson Av & New York Av	370	9	41	116
Saturday MD	B12	EB	Albany Av & Winthrop St	354	9	39	132
		WB	Clarkson Av & Kings Cnty Hos Main	275	8	34	157

Source: STV Incorporated, 2023
Notes:
(1) Weekday peak hours: 8-9AM, 1-2 PM, 4-5 PM; Saturday Peak Hour 3-4 PM
(2) 2022 peak hour passenger volumes were adjusted based on 2019 pre-pandemic passenger loadings
(3) Based on most recent available data from NYCT (September 2022)
(4) Available capacity based on NYCT loading guideline of 54 passengers per standard bus

Subway Service

Subway Stations

As discussed previously in Section 14.5, "Level 2 Screening Assessment," project-generated trips at the Winthrop Street Station (2/5) would exceed the 200-trip *CEQR Technical Manual* analysis threshold during the weekday AM, PM, and Saturday midday peak hours. For this station, key circulation elements (e.g., street stairs and fare arrays) expected to be used by the concentrations of new demand from the Proposed Project are analyzed.

The Winthrop Street Station is served by the 2 and 5 trains operating on the IRT Nostrand Avenue Line. As shown on Figure 14-21, "Winthrop Street Subway Station," access from street level down to the platform level is provided by two street stairs. The four-foot-wide street stair (S2) on the northeast corner of Winthrop Street and Nostrand Avenue provides access to the Manhattan-bound platform through a fare control area consisting of three turnstiles and an emergency gate. The four-foot-wide street stair (S1) on the southwest corner of Parkside Avenue and Nostrand Avenue provides access to the Flatbush-bound platform through a fare control area consisting of three High Entry/Exit Turnstiles ("HEET") and an emergency gate.

Station passenger volume data was collected for each station access point concurrent with the traffic and pedestrian data collection effort. A comparison of 2023 passenger data to pre-pandemic 2019 station passenger volumes indicate that 2023 volumes are approximately 50 to 60 percent of pre-pandemic conditions; therefore, the 2023 station access point counts were adjusted to pre-pandemic conditions using 2019 data provided by NYCT. Count findings indicate that the highest passenger volumes are

processed by Stair S2 during the AM peak hour with 1,043 station entries and 114 exits. Stair S2 processed 768 entries and 59 exits during the PM peak hour. Stair S1 processed lower pedestrian volumes, peaking at 44 entries/960 exits during the AM peak hour and 93 entries/834 exits during the PM peak hour.

As listed in Table 14-13, "Existing Conditions for Pedestrian Elements at Winthrop Street Subway Station," all fare array elements operate at an acceptable LOS A condition during the weekday AM, PM, and Saturday midday peak hours. The Parkside Avenue stairs operates at LOS D during the weekday AM and PM peak hours and the Winthrop Street stairs operate at LOS C during the AM peak hour. The Winthrop Street stairs during the PM peak hour and both stairs during the Saturday peak hour operate at an acceptable LOS B or better during the weekday AM, PM, and Saturday midday peak hours.

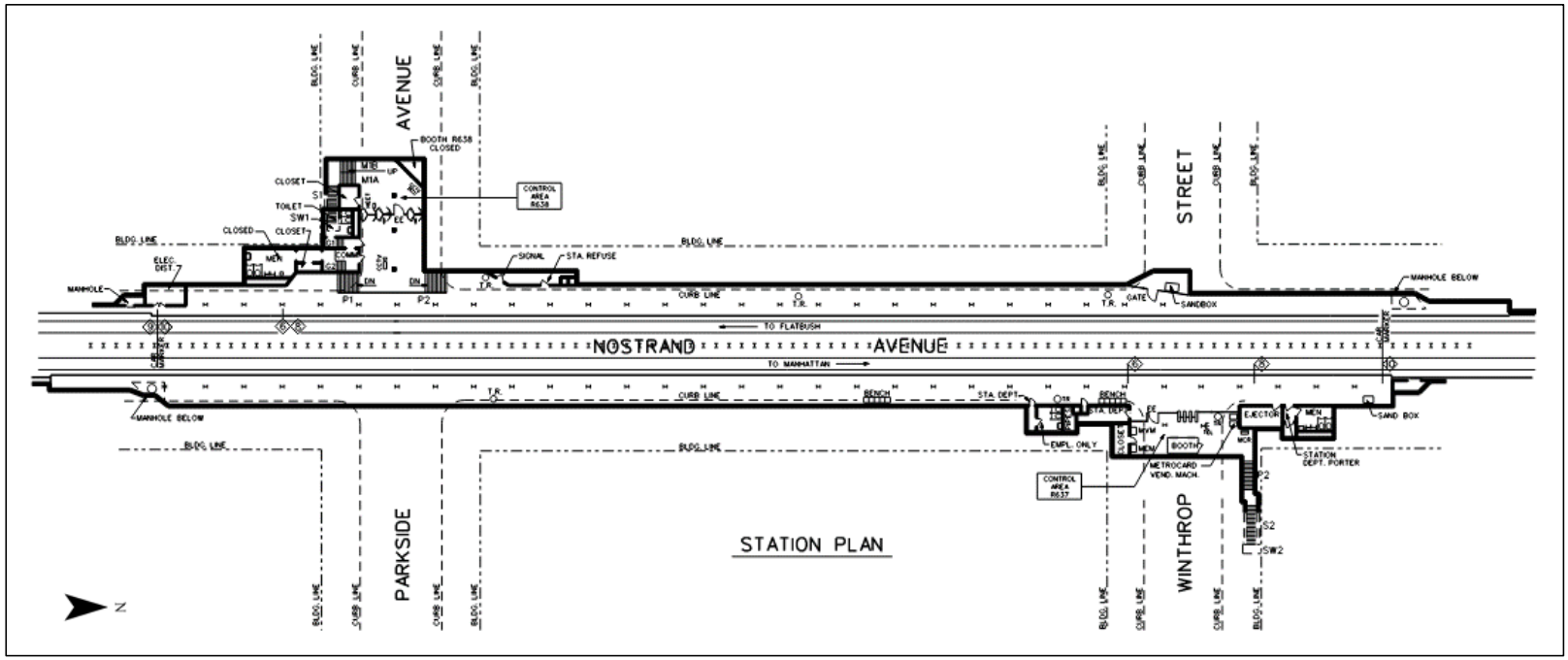

Figure 14-21
Winthrop Street Subway Station

Source: NYCT; STV Incorporated, 2023

Kingsboro Psychiatric Center Mixed-Use Project

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Table 14-13: Existing Conditions for Pedestrian Elements at Winthrop Street Subway Station

Stair Elements

Station	Peak Period	Stair	Width (ft.)	Effective Width (ft.)	Guideline Capacity (per 15 minutes)	Peak Hour Pedestrian Volumes		15-Minute Pedestrian Volumes		Friction Factor	Surging Factor		V/C Ratio	LOS
						Up	Down	Up	Down		Up	Down		
2/5 Train Winthrop Street	Weekday AM	S1 (Parkside)	4.00	3.00	150	960	44	294	16	0.90	0.75	0.90	1.01	D
		S2 (Winthrop)	4.00	3.00	150	114	1,043	39	311	0.90	0.75	0.90	0.98	C
	Weekday PM	S1 (Parkside)	4.00	3.00	150	834	93	283	26	0.90	0.75	0.90	1.00	D
		S2 (Winthrop)	4.00	3.00	150	59	768	13	211	0.90	0.75	0.90	0.62	B
	Saturday MD	S1 (Parkside)	4.00	3.00	150	282	26	176	15	0.90	0.75	0.90	0.62	B
		S2 (Winthrop)	4.00	3.00	150	30	254	9	68	0.90	0.75	0.90	0.22	A

Fare Control Elements

Peak Period	Entrance	Control Element	Quantity	Guideline Capacity (per 15 minutes)		Peak Hour Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out	In	Out	In	Out				
Weekday AM	S1 (Parkside)	HEET	3	255	540	44	960	16	294	0.75	0.90	0.29	A
	S2 (Winthrop)	Two-way Turnstile	3	420	645	1,043	114	311	39	0.75	0.90	0.30	A
Weekday PM	S1 (Parkside)	HEET	3	255	540	93	834	26	283	0.75	0.90	0.30	A
	S2 (Winthrop)	Two-way Turnstile	3	420	645	768	59	211	13	0.75	0.90	0.20	A
Saturday Midday	S1 (Parkside)	HEET	3	255	540	26	282	15	176	0.75	0.90	0.18	A
	S2 (Winthrop)	Two-way Turnstile	3	420	645	254	30	68	9	0.75	0.90	0.07	A

1. Guideline capacities as per *CEQR Technical Manual*
2. High Entry and Exit Turnstile (HEET)

Source: NYCT; STV Incorporated, 2023.

Subway Line Haul

Line haul is the volume of transit riders passing a defined point on a given transit route. For the 2 and 5 lines, the line haul is measured at the actual maximum load point leaving the station (the point where the trains carry the greatest number of passengers during the peak hour), which is typically downtown Brooklyn or Manhattan. The peak direction of travel is northbound (Manhattan-bound) in the AM peak hour and southbound (Brooklyn-bound) in the PM peak hour.

Table 14-14, "Existing Subway Line Haul Analysis," lists existing line haul conditions in the peak direction at the maximum load points for the 2 and 5 lines during the weekday AM, PM, and Saturday midday peak hours. As identified in Table 14-15, both lines operate below the guideline capacity in the peak direction during the weekday and Saturday peak hours.

Table 14-14: Existing Subway Line Haul Analysis

Peak Hour	Line	Dir	Maximum Load Point (Leaving Station)	Average Trains Per Hour[1]	Average Cars Per Hour[1]	Average Passengers Per Hour[1]	Average Passengers Per Car[1]	Guideline Passengers Per Car[2]	V/C Ratio[3]
AM	2	NB	Nevins St	9.9	99	7,356	75	110	0.68
	5	NB	14 St - Union Sq	11.3	113	10,855	96	166	0.58
PM	2	SB	Wall St	10.1	101	6,274	62	110	0.56
	5	SB	Grand Central - 42 St	8.3	83	8,085	97	166	0.58
Saturday Midday	2	NB	Nevins St	7.5	75	1,656	22	50	0.44
	2	SB	Hoyt St	7.5	75	1,999	27	50	0.53

Notes:
(1) Based on 2018/2019 ridership and train throughput data from NYCT.
(2) Guideline capacities are based on NYCT rush hour and off-peak loading guidelines, which vary by car type, line,and location based on frequency and type of service.
(3) Volume to guideline capacity ratio.
Source: NYCT; STV Incorporated, 2023.

THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO ACTION CONDITIONS)

Bus Service

Demand on the local bus services operating in the vicinity of the study area is expected to increase during the 2023 through 2031 period as a result of background growth. The annual background growth rate was assumed to be 0.5 percent for Years 1 to 5 and 0.25 percent for Year 6 and beyond for a total compounded background growth rate of approximately three percent.

As listed in Table 14-15, "No Action Local Bus Analysis," existing levels of bus service would be sufficient to provide adequate supply to meet the projected demand in the 2031 No Action conditions for all analysis time periods except for the westbound route during the weekday AM peak hour and eastbound route during the weekday PM peak hour. It was assumed that MTA NYCT would adjust the bus service to avoid any capacity shortfall along all bus routes; therefore, three buses were added to the westbound route during the weekday AM peak hour and one bus was added to the eastbound route during the weekday PM peak hour to adjust the potential shortfall.

Table 14-15: No Action Local Bus Analysis

Peak Hour [1]	Route	Direction	Maximum Load Point	Peak Hour Passengers	No Action Conditions with Current Service Levels			No Action Conditions with Potential Service Adjustments		
					Peak Hour Buses [2]	Average Passengers Per Bus	Available Capacity [3]	Peak Hour Buses	Average Passengers Per Bus	Available Capacity [4]
Weekday AM	B12	EB	Clarkson Av & Nostrand Av	468	9	52	18	9	52	18
		WB	East New York Av & Troy Av	727	11	66	-133	14	52	29
Weekday MD	B12	EB	Clarkson Av & E 38 St	313	9	35	173	9	35	173
		WB	Empire Bl & Utica Av	355	9	39	131	9	39	131
Weekday PM	B12	EB	Lefferts Av & Schenectady Av	517	9	57	-31	10	52	23
		WB	Clarkson Av & New York Av	384	9	43	102	9	43	102
Saturday MD	B12	EB	Albany Av & Winthrop St	366	9	41	120	9	41	120
		WB	Clarkson Av & Kings Cnty Hos Main	284	8	36	148	8	36	148

Source: STV Incorporated, 2023
Notes:
(1) Weekday peak hours: 8-9AM, 1-2 PM, 4-5 PM; Saturday Peak Hour 3-4 PM
(2) Based on most recent available data from NYCT (September 2022)
(4) Available capacity based on NYCT loading guideline of 54 passengers per standard bus

Subway Service

Subway Stations

In No Action conditions, demand at the Winthrop Street Station is expected to increase during the 2023 through 2031 period as a result of background growth. The annual background growth rate was assumed to be 0.5 percent for Years 1 to 5 and 0.25 percent for Year 6 and beyond for a total compounded background growth rate of approximately three percent.

As listed in Table 14-16, "No Action Conditions for Pedestrian Elements at Winthrop Street Subway Station," the analyzed fare arrays at this station would continue to operate at acceptable LOS A conditions during the weekday AM, PM, and Saturday midday peak hours. The station stairs would continue to operate at the same levels of service as the existing condition except during the Winthrop Street stairs, which would operate at LOS D conditions during the weekday AM peak hour.

Table 14-16: No Action Conditions for Pedestrian Elements at Winthrop Street Subway Station

Stair Elements

Station	Peak Period	Stair	Width (ft.)	Effective Width (ft.)	Guideline Capacity (per 15 minutes)	Peak Hour Pedestrian Volumes		15-Minute Pedestrian Volumes		Friction Factor	Surging Factor		V/C Ratio	LOS
						Up	Down	Up	Down		Up	Down		
2/5 Train Winthrop Street	Weekday AM	S1 (Parkside)	4.00	3.00	150	992	45	304	17	0.90	0.75	0.90	1.05	D
		S2 (Winthrop)	4.00	3.00	150	118	1,077	40	321	0.90	0.75	0.90	1.01	D
	Weekday PM	S1 (Parkside)	4.00	3.00	150	862	96	292	27	0.90	0.75	0.90	1.04	D
		S2 (Winthrop)	4.00	3.00	150	61	793	13	218	0.90	0.75	0.90	0.64	B
	Saturday MD	S1 (Parkside)	4.00	3.00	150	291	27	182	15	0.90	0.75	0.90	0.64	B
		S2 (Winthrop)	4.00	3.00	150	31	262	9	70	0.90	0.75	0.90	0.22	A

Fare Control Elements

Peak Period	Entrance	Control Element	Quantity	Guideline Capacity (per 15 minutes)		Peak Hour Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out	In	Out	In	Out				
Weekday AM	S1 (Parkside)	HEET	3	255	540	45	992	17	304	0.75	0.90	0.30	A
	S2 (Winthrop)	Two-way Turnstile	3	420	645	1,077	118	321	40	0.75	0.90	0.31	A
Weekday PM	S1 (Parkside)	HEET	3	255	540	96	862	27	292	0.75	0.90	0.31	A
	S2 (Winthrop)	Two-way Turnstile	3	420	645	793	61	218	13	0.75	0.90	0.20	A
Saturday Midday	S1 (Parkside)	HEET	3	255	540	27	291	15	182	0.75	0.90	0.19	A
	S2 (Winthrop)	Two-way Turnstile	3	420	645	262	31	70	9	0.75	0.90	0.07	A

1. Guideline capacities as per *CEQR Technical Manual*
2. High Entry and Exit Turnstile (HEET)

Source: NYCT; STV Incorporated, 2023.

Subway Line Haul

Table 14-17, "No Action Subway Line Haul Analysis," lists the anticipated line haul conditions in the peak direction at the maximum load points for the 2 and 5 lines during the weekday AM and PM peak hours. In No Action conditions, demand on the 2 and 5 lines is expected to increase during the 2023 through 2031 period as a result of background growth. The annual background growth rate was assumed to be 0.5 percent for Years 1 to 5 and 0.25 percent for Year 6 and beyond for a total compounded background growth rate of approximately three percent. As listed in Table 14-17, the 2 and 5 lines would continue to operate below the guideline capacity in the peak direction at the maximum load point during the weekday AM, PM, and Saturday midday peak hours.

Table 14-17: No Action Subway Line Haul Analysis

Peak Hour	Line	Dir	Maximum Load Point (Leaving Station)	Average Trains Per Hour[1]	Average Cars Per Hour[1]	Average Passengers Per Hour[1]	Average Passengers Per Car[1]	Guideline Passengers Per Car[2]	V/C Ratio[3]
AM	2	NB	Nevins St	9.9	99	7,674	78	110	0.71
	5	NB	14 St - Union Sq	11.3	113	11,325	100	166	0.60
PM	2	SB	Wall St	10.1	101	6,546	65	110	0.59
	5	SB	Grand Central - 42 St	8.3	83	8,435	101	166	0.61
Saturday Midday	2	NB	Nevins St	7.5	75	1,732	23	50	0.46
	2	SB	Hoyt St	7.5	75	2,091	28	50	0.56

Notes:
(1) Based on 2018/2019 ridership/train throughput data from NYCT and background ridership growth.
(2) Guideline capacities are based on NYCT rush hour and off-peak loading guidelines, which vary by car type, line,and location based on frequency and type of service.
(3) Volume to guideline capacity ratio.
Source: NYCT; STV Incorporated, 2023.

THE FUTURE WITH THE PROPOSED ACTIONS (WITH ACTION CONDITIONS)

Bus Service

As listed in Table 14-4, "Incremental Peak Hour Bus Trips by Route," the Proposed Project is projected to generate approximately 429, 231, 421, and 374 bus trips during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. A portion of the subway trips would start and end as bus trips near the Project Site and have been included in these bus trip totals. All subway trips assigned to and from the Q train at the Parkside Avenue Station and half of the 2/5 train passengers at the Winthrop Street Station were assumed to transfer to or from buses.

Projected bus-only trips were assigned to the four bus routes serving the Project Site based on several factors including the proximity of the route's bus stops to the Proposed Project, census data of existing bus origins and destinations for residents and workers in the Proposed Project study area, and transit route travel times. Overall, projected bus-only trips were assigned to nearby routes as follows:

- 60 percent to the B12
- 13 percent to the B35
- 12 percent to the B44
- 15 percent to the B46

Subway trips between the Proposed Project and the Winthrop Street Station (2/5) and Parkside Station (Q) were assigned to the B12 bus route and reviewed by NYCT.

A detailed analysis of bus conditions is generally not required if a proposed action is projected to result in fewer than 50 peak hour trips being assigned to a single bus route (in one direction), as this level of new demand is considered unlikely to result in significant adverse impacts according to the general thresholds used by MTA and specified in the *CEQR Technical Manual*. As a result of the Proposed Project, only the B12 bus route is expected to carry 50 or more new trips in each direction in the analysis peak hours and was analyzed for the weekday AM, midday, PM, and Saturday midday peak hours (see Table 14-4, "Incremental Peak Hour Bus Trips by Route," for a summary of anticipated numbers of new riders expected on each local bus route in the weekday AM, midday, PM, and Saturday midday peak hours).

As listed in Table 14-18, "With Action Local Bus Analysis," passenger demands on the B12 bus route would increase at the maximum load points in each travel direction for the weekday AM, midday, PM, and Saturday midday peak hours. Passenger demand increments would range from an estimated 92 to 200 trips per direction during the peak hours. These project increments are primarily attributed to the subway transfer at the Winthrop Street and Parkside Avenue stations; consequently, these bus passenger loadings would occur along the B12 route west of the Project Site between Albany Avenue and the Parkside Avenue Station. During several time periods, the existing B12 bus route maximum load point changes to a location west of the Project Site, generally at the Clarkson Avenue/East 38th Street bus stop for the eastbound route and at Clarkson Avenue/Kings Country Hospital bus stop for the westbound route.

The Proposed Project would result in a capacity shortfall for the B12 bus routes during the weekday AM peak hour for the eastbound route. As a result, the B12 bus route would experience a significant adverse impact based on *CEQR Technical Manual* criteria. As discussed in Chapter 23, "Mitigation Measures," the significant adverse impact to these bus services could be mitigated by increasing the number of buses in the peak hours.

Table 14-18: With Action Local Bus Analysis

Peak Hour [1]	Route	Direction	Existing Maximum Load Point	Peak Hour Buses	Maximum Load Point	No Action Available Capacity at Maximum Load Point	Project Increment at Maximum Load Point	With Action Available Capacity [2]
Weekday AM	B12	EB	Clarkson Av & Nostrand Av	9	Clarkson Av & Nostrand Av	18	138	-120
		WB	East New York Av & Troy Av	14	Clarkson Av & Albany Av	232	200	32
Weekday MD	B12	EB	Clarkson Av & E 38 St	9	Clarkson Av & E 38 St	173	93	80
		WB	Empire Bl & Utica Av	9	Clarkson Av & King Cnty Hos	226	92	134
Weekday PM	B12	EB	Lefferts Av & Schenectady Av	10	Clarkson Av & E 38 St	185	167	18
		WB	Clarkson Av & New York Av	9	Clarkson Av & New York Av	174	168	6
Saturday MD	B12	EB	Albany Av & Winthrop St	9	Clarkson Av & E 38 St	218	159	59
		WB	Clarkson Av & Kings Cnty Hos Main	8	Clarkson Av & King Cnty Hos	148	140	7

Source: STV Incorporated, 2023
Notes:
(1) Weekday peak hours: 8-9AM, 1-2 PM, 4-5 PM; Saturday Peak Hour 3-4 PM
(2) Available capacity based on NYCT loading guideline of 54 passengers per standard bus

Subway Service

Subway Stations

As listed in Table 14-3, "Travel Demand Forecast," the Proposed Project is expected to generate a net increment of approximately 401, 387, and 349 subway trips during the weekday AM, PM, and Saturday midday peak hours, respectively. The highest number of peak hour subway trips is expected to occur at the Winthrop Street Station on the 2 and 5 lines, which is projected to experience approximately 243, 235, and 212 incremental trips (in and out combined) during the weekday AM, PM, and Saturday midday peak hours. The number of person trips assigned to the Parkside Avenue Station (Q) would be less than 160 persons during each peak hour and less than the *CEQR Technical Manual* threshold required for detailed transit analysis and no significant adverse transit impacts would be expected.

Table 14-19, "With Action Conditions for Pedestrian Elements at Winthrop Street Subway Station," lists conditions at the stairs and fare arrays at the station in the future with the Proposed Actions. As listed in Tables 14-19, the fare arrays are projected to operate at acceptable LOS A conditions during the weekday AM, PM, and Saturday midday peak hours. The Winthrop and Parkside stairs during the Saturday midday peak hour and the Winthrop Street stairs during the weekday PM peak hour would operate with an acceptable LOS C condition or better. The Winthrop Street and Parkside Avenue street stairs would deteriorate within LOS D conditions during the weekday AM peak hour and during the PM peak hour for the Parkside Avenue stairs. This change would not exceed NYCT's significant adverse impact thresholds; therefore, no significant adverse impacts to the Winthrop Street Station are anticipated based on *CEQR Technical Manual* criteria.

Table 14-19: With Action Conditions for Pedestrian Elements at Winthrop Street Subway Station

Stair Elements

Station	Peak Period	Stair	Width (ft.)	Effective Width (ft.)	Guideline Capacity (per 15 minutes)	Peak Hour Pedestrian Volumes		15-Minute Pedestrian Volumes		Friction Factor	Surging Factor		V/C Ratio	LOS
						Up	Down	Up	Down		Up	Down		
2/5 Train Winthrop Street	Weekday AM	S1 (Parkside)	4.00	3.00	150	1,088	51	333	18	0.90	0.75	0.90	1.15	D
		S2 (Winthrop)	4.00	3.00	150	121	1,215	41	362	0.90	0.75	0.90	1.13	D
	Weekday PM	S1 (Parkside)	4.00	3.00	150	975	100	331	28	0.90	0.75	0.90	1.17	D
		S2 (Winthrop)	4.00	3.00	150	65	905	14	249	0.90	0.75	0.90	0.73	C
	Saturday MD	S1 (Parkside)	4.00	3.00	150	400	31	250	18	0.90	0.75	0.90	0.87	C
		S2 (Winthrop)	4.00	3.00	150	35	357	11	95	0.90	0.75	0.90	0.30	A

Fare Control Elements

Peak Period	Entrance	Control Element	Quantity	Guideline Capacity (per 15 minutes)		Peak Hour Pedestrian Volumes		15-Minute Pedestrian Volumes		Surging Factor	Friction Factor	V/C Ratio	LOS
				In	Out	In	Out	In	Out				
Weekday AM	S1 (Parkside)	HEET	3	255	540	51	1,088	18	333	0.75	0.90	0.33	A
	S2 (Winthrop)	Two-way Turnstile	3	420	645	1,215	121	362	41	0.75	0.90	0.35	A
Weekday PM	S1 (Parkside)	HEET	3	255	540	100	975	28	331	0.75	0.90	0.34	A
	S2 (Winthrop)	Two-way Turnstile	3	420	645	905	65	249	14	0.75	0.90	0.23	A
Saturday Midday	S1 (Parkside)	HEET	3	255	540	31	400	18	250	0.75	0.90	0.25	A
	S2 (Winthrop)	Two-way Turnstile	3	420	645	357	35	95	11	0.75	0.90	0.09	A

1. Guideline capacities as per *CEQR Technical Manual*
2. High Entry and Exit Turnstile (HEET)

Source: NYCT; STV Incorporated, 2023.

Subway Line Haul

Table 14-20, "With Action Subway Line Haul Analysis," lists the anticipated line haul conditions in the peak direction at the maximum load points for the 2 and 5 lines during the AM and PM peak hours for the 2031 With Action condition. All lines would continue to operate below the guideline capacity in the peak direction at the maximum load point during the weekday AM, PM, and Saturday midday peak hours; therefore, significant adverse impacts to subway line haul conditions are not anticipated based on *CEQR Technical Manual* criteria.

Table 14-20: With Action Subway Line Haul Analysis

Peak Hour	Line	Dir	Maximum Load Point (Leaving Station)	Average Trains Per Hour[1]	Average Cars Per Hour[1]	Average Passengers Per Hour[1]	Average Passengers Per Car[1]	Guideline Passengers Per Car[2]	V/C Ratio[3]
AM	2	NB	Nevins St	9.9	99	7,730	78	110	0.71
	5	NB	14 St - Union Sq	11.3	113	11,407	101	166	0.61
PM	2	SB	Wall St	10.1	101	6,596	65	110	0.59
	5	SB	Grand Central - 42 St	8.3	83	8,499	102	166	0.61
Saturday Midday	2	NB	Nevins St	7.5	75	1,781	24	50	0.48
	2	SB	Hoyt St	7.5	75	2,150	29	50	0.57

Notes:
(1) Based on 2018/2019 ridership/train throughput data from NYCT, background ridership growth, and With Action increment.
(2) Guideline capacities are based on NYCT rush hour and off-peak loading guidelines, which vary by car type, line,and location based on frequency and type of service.
(3) Volume to guideline capacity ratio.
Source: NYCT; STV Incorporated, 2023

14.9 Pedestrians

EXISTING CONDITIONS

The study area currently experiences low pedestrian volumes during the peak periods. As discussed previously in Section 14.5, "Level 2 Screening Assessment," the analysis of pedestrian conditions focuses on representative pedestrian elements where new trips generated by the Proposed Project are expected to be most concentrated. These elements — sidewalks, corner areas, and crosswalks — near the Project Site are selected as they provide access to local bus stops and commercial uses. Specifically, a quantitative analysis of pedestrian conditions was performed for the weekday AM, midday, PM, and Saturday midday peak periods at selected crosswalk, corner, and sidewalk elements at:

- Clarkson Avenue and Albany Avenue – north crosswalk and northwest and northeast corners
- Winthrop Street and Albany Avenue – south crosswalk and southwest and southeast corners
- Clarkson Avenue between Albany Avenue and East 42nd Street – north sidewalk
- Clarkson Avenue between East 42nd Street and East 43rd Street – north sidewalk
- Albany Avenue between Clarkson Avenue and Winthrop Street – east sidewalk

Existing pedestrian volumes through and around the Project Site are low; two-way pedestrian volumes on any pedestrian element (i.e., sidewalk or crosswalk) are generally less than 100 persons per hour during each of the analysis periods. One exception is that approximately 150 pedestrians were observed on the west sidewalk of Albany Avenue south of Winthrop Street near the B12 bus stop.

Overall, all pedestrian elements operate at an acceptable LOS B condition or better due to low existing pedestrian volumes (see Table 14-21, "Existing Pedestrian Conditions").

Table 14-21: Existing Pedestrian Conditions

Intersection and Element	AM Peak		MD Peak		PM Peak		SAT Peak	
	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS
Winthrop Street and Albany Avenue								
Southeast Corner	1,334	A	2,089	A	1,747	A	2,738	A
Southwest Corner	394	A	750	A	602	A	805	A
South Crosswalk	289	A	823	A	368	A	1,255	A
Clarkson Avenue and Albany Avenue								
Northeast Corner	577	A	689	A	659	A	997	A
Northwest Corner	163	A	218	A	262	A	292	A
North Crosswalk	122	A	238	A	203	A	421	A
Albany Avenue between Winthrop Street and Clarkson Avenue								
East Sidewalk	799	A	990	A	860	A	1,276	A
Clarkson Avenue between Albany Avenue and East 42nd Street								
North Sidewalk	533	A	581	A	567	A	1,117	A
Clarkson Avenue between East 42nd Street and East 43rd Street								
North Sidewalk	533	A	693	A	567	A	1,117	A

Note: Average Space is based on the assumption that pedestrians distribute themselves uniformly throughout the effective crosswalk and corner space. LOS designations are based on average pedestrian space expressed as square feet per pedestrian (sf/ped).

Source: STV Incorporated, 2023.

THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO ACTION CONDITIONS)

Pedestrian Elements

Pedestrian volumes along analyzed sidewalks, crosswalks, and corner areas are expected to increase during the 2023 through 2031 period as a result of background growth. The annual background growth rate was assumed to be 0.5 percent for Years 1 to 5 and 0.25 percent for Year 6 and beyond for a total compounded background growth rate of approximately three percent.

Table 14-22, "No Action Pedestrian Conditions," lists the average pedestrian space at all analyzed pedestrian elements in the No Action conditions. All pedestrian elements would continue to operate at acceptable LOS B conditions or better during each analysis period.

Table 14-22: No Action Pedestrian Conditions

Intersection and Element	AM Peak		MD Peak		PM Peak		SAT Peak	
	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS
Winthrop Street and Albany Avenue								
Southeast Corner	1,291	A	2,022	A	1,691	A	2,651	A
Southwest Corner	381	A	726	A	583	A	859	A
South Crosswalk	276	A	792	A	477	A	1,207	A
Clarkson Avenue and Albany Avenue								
Northeast Corner	558	A	795	A	638	A	964	A
Northwest Corner	152	A	237	A	253	A	283	A
North Crosswalk	103	A	329	A	237	A	387	A
Albany Avenue between Winthrop Street and Clarkson Avenue								
East Sidewalk	773	A	958	A	833	A	1,235	A
Clarkson Avenue between Albany Avenue and East 42nd Street								
North Sidewalk	516	B	671	A	549	A	1,081	A
Clarkson Avenue between East 42nd Street and East 43rd Street								
North Sidewalk	516	B	671	A	549	A	1,081	A

Note: Average Space is based on the assumption that pedestrians distribute themselves uniformly throughout the effective crosswalk and corner space. LOS designations are based on average pedestrian space expressed as square feet per pedestrian (sf/ped).

Source: STV Incorporated, 2023.

THE FUTURE WITH THE PROPOSED ACTIONS (WITH ACTION CONDITIONS)

Pedestrian Elements

The Proposed Project would generate new pedestrian demand on analyzed sidewalks, crosswalks, and corner areas by 2031. This new demand would include trips made solely by walking, as well as pedestrian trips en route to and from bus stops. Pedestrian trips generated by the Proposed Project are expected to be most concentrated in proximity to the Project Site and along corridors connecting the Site to area bus routes. The Proposed Project consists of two homeless shelters that will be rebuilt and relocated on the Project Site to fully replace the existing 364 beds currently available. These two shelters generate up to approximately 90 pedestrian trips during the analysis peak hours. These existing pedestrian trips have been reassigned from the existing shelter locations to the proposed locations.

As listed in Table 14-3, "Travel Demand Forecast," the Proposed Project is expected to generate a net total of approximately 181 walk trips in the weekday AM peak hour, 177 in the midday peak hour, 259 in the PM peak hour, and 293 walk trips during the Saturday midday peak hour. Persons en route to and from transit (i.e., bus stops and subway stations) are projected to add approximately 555, 298, 543, and 484 additional pedestrian trips to area sidewalks and crosswalks during these same periods, respectively.

These pedestrian volumes are added to the projected No Action pedestrian volume network to generate the With Action pedestrian volumes for analysis.

The pedestrian trip distribution patterns were estimated using the New York City MapPLUTO data for the residential unit density within a quarter-mile distance from the proposed redevelopment. Walking trips to/from the bus stops and/or subway stations in the vicinity of the Project Site are also included in the pedestrian trip assignments.

The analyses show that the pedestrian elements in the Project study area would operate at acceptable LOS B conditions or better during the weekday AM, midday, and PM, and Saturday midday peak analysis hours (see Table 14-23, "With Action Pedestrian Conditions").

Table 14-23: With Action Pedestrian Conditions

Intersection and Element	AM Peak		MD Peak		PM Peak		SAT Peak	
	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS
Winthrop Street and Albany Avenue								
Southeast Corner	406	A	709	A	390	A	521	A
Southwest Corner	154	A	304	A	174	A	246	A
South Crosswalk	85	A	180	A	66	A	135	A
Clarkson Avenue and Albany Avenue								
Northeast Corner	234	A	354	A	225	A	248	A
Northwest Corner	90	A	139	A	112	A	116	A
North Crosswalk	43	B	110	A	55	B	92	A
Albany Avenue between Winthrop Street and Clarkson Avenue								
East Sidewalk	184	B	337	A	188	A	193	A
Clarkson Avenue between Albany Avenue and East 42nd Street								
North Sidewalk	202	B	318	A	185	A	200	A
Clarkson Avenue between East 42nd Street and East 43rd Street								
North Sidewalk	184	B	267	A	163	A	187	A

Note: Average Space is based on the assumption that pedestrians distribute themselves uniformly throughout the effective crosswalk and corner space. LOS designations are based on average pedestrian space expressed as square feet per pedestrian (sf/ped).

Source: STV Incorporated, 2023.

14.10 Vehicular and Pedestrian Safety Evaluation

NYCDOT INITIATIVES

Vision Zero Brooklyn Safety Action Plan

The City's Vision Zero initiative seeks to eliminate all deaths from traffic crashes, regardless of whether on foot, bicycle, or inside a motor vehicle. In an effort to drive these fatalities down, NYCDOT and NYPD developed a set of five plans, each of which analyzes the unique conditions of one New York City borough and recommends actions to address the borough's specific challenges to pedestrian safety. These plans pinpoint the conditions and characteristics of pedestrian fatalities and severe injuries; they also identify priority corridors, intersections, and areas that disproportionately account for pedestrian fatalities and severe injuries, prioritizing them for safety interventions. The plans outline a series of recommended actions comprised of engineering, enforcement, and education measures that intend to alter the physical and behavioral conditions on City streets that lead to pedestrian fatality and injury. The Proposed Project study area does not include any NYCDOT Vision Zero priority intersections; however, Utica Avenue to the east, Troy Avenue and Schenectady Avenue north of Winthrop Street, and Linden Avenue to the south are Vision Zero Priority Corridors.

As part of the Vision Zero Initiative, several measures have been implemented within the Proposed Project traffic study area, including:

- Arterial Slow Zones – a program that includes lower speed limits and signal timing changes along arterial corridors to make it consistent with the new speed limit and to maintain mobility on the heavily used corridors to prevent unnecessary traffic using residential side streets. Utica Avenue is an Arterial Slow Zone.

- Leading Pedestrian Interval (LPI) – provides pedestrians with the opportunity to enter the crosswalk at an intersection at least 7 seconds before vehicles are given a green indication. The Clarkson Avenue intersections at Utica Avenue and New York Avenue include LPIs.

- Turn Traffic Calming – a program to reduce left- and right-turn speeds and enforce safe turning behavior through the use of turn calming treatments. The intersection of Utica Avenue and Winthrop Street has a basic hardened centerline, which consists of rubber speed bumps installed on the centerline of the roadway and extending up to six feet into the intersection to calm left-turn movements.

NYC Pedestrian Mobility Plan

NYCDOT has developed a Pedestrian Mobility Plan to inform street and sidewalk design to enhance existing safety/accessibility guidelines and to encourage more walking trips, which benefits the city by reducing the demand for vehicles. The plan uses anticipated pedestrian volumes to designate five types of streets in NYC (Baseline, Community Connector, Neighborhood Corridor, Regional Corridor, and Global Corridor).

Clarkson Avenue and Winthrop Street adjacent to the Proposed Project are both identified as Neighborhood Corridors, which are streets that have small groups of people passing each other and consistent pedestrian destinations, such as neighborhood business districts or large schools or parks. The design guidelines recommend that the sidewalks along Neighborhood Corridors be a minimum 15 feet wide to provide a 12-foot-wide walk lane and a three-foot-wide furnishing zone for street trees, lighting, bicycle parking, etc.

Albany Avenue adjacent to the Proposed Project is designated as a Community Connector, which are streets that have individuals passing one another or small groups and are typically residential streets that connect to nearby destinations such as small parks or schools. The design guidelines recommend that the sidewalks along Community Corridors be a minimum of 10 feet wide to provide an eight-foot-wide travel lane and two-foot-wide furnishing zone.

STUDY AREA HIGH CRASH LOCATIONS

A high-crash location is defined by the *CEQR Technical Manual* as a location identified along a Vision Zero corridor/intersection or with five or more pedestrian/bicyclist injury crashes in any consecutive 12 months of the most recent three-year period for which data is available. In addition, a high-crash location is any location along a Vision Zero Priority Corridor with three or more pedestrian/bicyclist injury crashes in any consecutive 12 months of the most recent three-year period for which data is available.

Based on the NYC OpenData Vision Zero Priority Corridors map, Linden Boulevard, Clarkson Avenue, Rutland Road, Utica Avenue, Nostrand Avenue, Kingston Avenue, and Schenectady Avenue are Vision Zero Priority Corridors in the study area.

Crash data for intersections within a quarter-mile from the Proposed Project as well as the intersections within the traffic study area were obtained from NYCDOT for the three-year period between January 1, 2017 and December 31, 2019. The data quantifies the total number of crashes involving injuries to pedestrians or bicyclists. During the three-year reporting period, a total of 236 crashes occurred, of which 63 were pedestrian-related crashes, and 15 were bicycle-related crashes. Table 14-24, "Summary of Motor Vehicle Crash Data 2017-2019," provides details of crash characteristics by intersection during the 2017 through 2019 period, as well as a breakdown of pedestrian and bicycle crashes by year and location. Five intersections would be considered high-crash intersections and include the four Albany Avenue

intersections at Rutland Road, Winthrop Street, Clarkson Avenue and Linden Boulevard as well as the intersection of Clarkson Avenue at East 37th Street due to the number of pedestrian/bicycle crashes. Four of the five above intersections are located along Vision Zero Priority Corridors except the intersection of Albany Avenue at Winthrop Street.

Albany Avenue at Clarkson Avenue experienced a total of 23 crashes during the three-year period from 2017 to 2019, of which eleven were pedestrian crashes. Five of the pedestrian crashes involved pedestrians being struck in the crosswalk by left-turning vehicles. This intersection currently provides left-turn lanes on the eastbound and westbound Clarkson Avenue approaches, but not on the northbound and southbound Albany Avenue approaches. The highest left-turn movements are processed by the eastbound and southbound approaches, ranging between 100 and 125 turning vehicles during the peak hours. This signalized intersection operates with a basic two-phase timing plan that does not provide protected left-turn movements or protected pedestrian movements. The intersection currently operates near capacity during the weekday AM peak hour; therefore, adding an exclusive left-turn phase or a leading pedestrian interval would significantly deteriorate existing LOS conditions. This intersection may be a candidate for NYCDOT to implement Turn Traffic Calming by installing hardened centerline treatments. This treatment would consist of rubber curb and bollards and/or rubber speed bumps installed on the centerline and extending into the intersection. These speed bumps would encourage motorists to make proper turning movements (i.e., not cross the centerline in advance of the turn and turn on a flared angle) thereby reducing turn speeds and making motorists more aware of pedestrians. The Proposed Project would add approximately 20 to 35 left-turning vehicles to the southbound and eastbound approaches and approximately 130 to 230 pedestrians to the north and east crosswalks at this intersection during the analysis peak hours.

Albany Avenue at Winthrop Street experienced a total of 22 crashes during the three-year period from 2017 to 2019, of which eight were pedestrian crashes and three were bicycle crashes. Five of the pedestrian crashes involved pedestrians being struck in the crosswalk by vehicles making a left turn from westbound Winthrop Street to southbound Albany Avenue. This intersection currently does not provide left-turn lanes on any approach and this signalized intersection operates with a basic two-phase timing plan that does not provide protected left-turn movements or protected pedestrian movements. The westbound left-turn movement averages approximately 100 vehicles during each analysis peak hour and the westbound approach generally operates at or over capacity during these periods. Adding an exclusive left-turn phase or a leading pedestrian interval would significantly deteriorate existing LOS conditions. This intersection may be a candidate for NYCDOT to implement Turn Traffic Calming by installing centerline speed bumps. The Proposed Project would add approximately 30 to 60 left-turning vehicles to the northbound and westbound approaches and approximately 160 to 310 pedestrians to the south and west crosswalks at this intersection during the analysis peak hours.

Table 14-24: Summary of Motor Vehicle Crash Data 2017-2019

Intersection		Vision Zero Corridor	Total Crashes			Injury Crashes												Fatalities		
						Motor Vehicle			Pedestrian			Bicycle			Total					
			2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
East 37th Street	Clarkson Avenue	Y	22	20	13	2	1	1	1	3	1	0	1	0	3	5	2	0	0	0
	Lenox Road	N	6	6	7	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0
East 38th Street	Clarkson Avenue	Y	4	7	4	1	1	1	0	0	0	0	1	0	1	2	1	0	0	0
	Lenox Road	N	5	5	5	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
Kingston Avenue	Rutland Road	Y	9	4	8	0	0	0	2	0	1	0	0	0	2	0	1	0	0	0
	Winthrop Street	Y	10	16	14	2	2	3	1	0	0	0	2	1	0	0	0	0	0	0
East 39th Street	Clarkson Avenue	Y	2	5	3	1	1	1	0	1	0	0	0	0	1	2	1	0	0	0
	Lenox Road	N	5	5	5	0	0	1	0	1	1	0	0	0	0	1	2	0	0	0
	Linden Blvd.	Y	5	4	7	1	1	1	0	0	0	0	0	1	1	1	2	0	0	0
East 40th Street	Clarkson Avenue	Y	5	1	5	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	Lenox Road	N	4	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Linden Blvd.	Y	3	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Albany Avenue	Midwood Street	N	5	6	4	3	0	2	0	1	1	0	1	0	3	2	3	0	0	0
	Rutland Road	Y	14	11	9	4	1	1	1	3	0	0	0	0	5	4	1	0	0	0
	Fenimore Street	N	3	5	7	1	1	1	0	1	1	0	0	0	1	2	2	0	0	0
	Hawthorne Street	N	4	3	7	0	0	3	0	0	1	0	0	0	0	0	4	0	0	0
	Winthrop Street	N	27	21	27	3	6	2	2	4	2	1	1	1	6	11	5	0	0	0
	Clarkson Avenue	Y	15	24	16	3	8	2	2	4	5	0	0	0	5	11	7	0	1	0
	Lenox Road	N	9	16	8	3	5	4	0	0	0	0	0	0	3	5	4	0	0	0
	Linden Blvd.	Y	12	13	9	4	2	6	0	2	0	0	1	0	4	5	6	0	0	0
East 42nd Street	Clarkson Avenue	Y	5	3	2	0	0	0	0	1	1	0	0	1	0	1	2	0	0	0
	Lenox Road	N	3	4	4	1	0	2	0	0	0	0	0	0	1	0	2	0	0	0
	Linden Blvd.	Y	9	6	12	2	1	4	0	0	1	0	0	0	2	1	5	0	0	0
East 43rd Street	Clarkson Avenue	Y	4	1	7	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
	Lenox Road	N	5	2	3	1	0	0	1	0	0	0	0	0	2	0	0	0	0	0
	Linden Blvd.	Y	9	7	4	1	0	2	0	1	0	0	1	0	1	2	2	0	0	0
Troy Avenue	Midwood Street	N	3	3	2	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
	Rutland Road	Y	10	6	1	1	1	0	0	1	0	0	0	0	1	2	0	0	0	0
	Fenimore Street	N	2	3	3	0	0	1	0	0	1	0	0	0	0	0	2	0	0	0
	Hawthorne Street	N	3	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Winthrop Street	N	4	6	6	0	2	1	2	0	0	0	0	0	2	2	1	0	0	0
	Clarkson Avenue	Y	2	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Lenox Road	N	2	2	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
	Linden Blvd.	Y	7	4	6	1	0	3	2	1	0	0	0	0	3	1	3	0	0	0
East 45th Street	Rutland Road	Y	1	3	2	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
	Winthrop Street	N	2	7	4	0	2	1	0	0	0	0	0	0	0	2	1	0	0	0
	Clarkson Avenue	Y	1	3	2	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
	Lenox Road	N	3	5	5	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
	Linden Blvd.	Y	4	4	5	0	0	3	0	1	0	0	0	0	0	1	3	0	0	0
East 46th Street	Rutland Road	Y	0	2	2	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
	Winthrop Street	N	6	4	4	1	0	0	0	1	0	0	1	0	1	2	0	0	0	0
	Clarkson Avenue	Y	1	0	3	1	0	2	0	0	0	0	0	0	1	0	2	0	0	0
	Lenox Road	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Linden Blvd.	Y	8	5	4	2	1	1	0	1	0	0	0	0	2	2	1	0	0	0
Schenectady Avenue	Rutland Road	Y	13	7	13	2	1	5	0	0	0	0	0	0	2	1	5	0	0	0
	Winthrop Street	Y	11	14	15	1	3	6	1	0	0	0	0	0	2	3	6	0	0	0
	Clarkson Avenue	Y	3	3	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
	Lenox Road	N	5	0	9	2	0	0	0	0	2	0	0	0	2	0	2	0	0	0
East 48th Street	Clarkson Avenue	Y	3	3	5	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0
	Lenox Road	N	3	3	3	1	1	2	0	0	0	0	0	0	1	1	2	0	0	0

Note: shaded cells high-crash intersections.
Source: NYCDOT crash data from January 1, 2017 to December 31, 2019.

14.11 Parking

EXISTING CONDITIONS

An inventory of existing on-street parking regulations within a quarter-mile radius of the Project Site was compiled from field data in January 2023. Curbside parking regulations for all block faces within the study area are listed in Appendix G. On-street public parking is generally governed by alternate-side-of-the-street regulations to facilitate street cleaning. On-street parking surveys were conducted on a representative midweek day when curbside regulations were in effect and on one Saturday to determine the available capacity. Three parking survey time periods were assessed — early weekday morning (4 to 6 AM) when residential parking demand would be highest, and weekday midday (11 AM to 1 PM) and Saturday midday (11 AM to 1 PM) when commercial and medical parking demand would be highest.

There are approximately 1,850 legal on-street parking spaces within a reasonable walking distance of the Project Site when no alternate-side regulations are in effect based on existing curbside parking regulations and taking into account curb space obstructed by curb cuts, fire hydrants, and other impediments. During the midday period, between 12 and 12:30 PM, this on-street parking supply is reduced to about 1,375 spaces due to street cleaning regulations.

This demand for on-street parking spaces peaks during the early weekday morning hours at approximately 1,615 spaces, resulting in an occupancy rate of 87 percent and approximately 235 available on-street parking spaces. The occupancy rate increases to 89 percent during the weekday midday period due to street cleaning regulations causing a reduced parking supply, resulting in about 150 available on-street parking spaces. The Saturday midday period (when no street cleaning occurs) provides the most available on-street parking supply as more than 360 spaces are available, resulting in an 80 percent occupancy rate (see Table 14-25, “Existing On-Street Parking Supply and Demand”).

Table 14-25: Existing On-Street Parking Supply and Demand

Parking Parameter	Weekday 4-6 AM	Weekday 11 AM - 1 PM	Saturday 11 AM - 1 PM
Parking-Space Supply	1,848	1,374	1,848
Demand (Occupancy Rate)	1,614 87%	1,227 89%	1,484 80%
Spaces Available (Rate)	234 13%	147 11%	364 20%

Source: STV Incorporated, 2023.

THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO ACTION CONDITIONS)

Between 2023 and 2031, it is expected that parking demand in the vicinity of the Project Site would increase, due to long-term background growth as well as the completion of the nearby Vital Brooklyn Development Sites (Kingsbrook Estates and Utica Crescent). Approximately one-quarter of the on-street parking area for the Vital Brooklyn Initiative overlaps with the Proposed Project's quarter-mile radius parking area; therefore, the on-street parking demand for these No Action developments have been included in the No Action Condition analysis. The annual background growth rate was assumed to be 0.5 percent for Years 1 to 5 and 0.25 percent for Year 6 and beyond for a total compounded background growth rate of approximately three percent. This background growth rate, recommended in the *CEQR Technical Manual* for projects in Brooklyn outside of the Downtown area, is applied to account for general increases in parking demand not attributable to specific development projects.

The 2031 No Action Condition increase in parking demand would decrease the number of available on-street parking spaces to approximately 134, 95, and 308 spaces during the weekday AM, midday, and Saturday midday peak periods respectively (see Table 14-26, "2031 No Action On-Street Parking Supply and Demand").

Table 14-26: 2031 No Action On-Street Parking Supply and Demand

Parking Parameter	Weekday 4-6 AM	Weekday 11 AM - 1 PM	Saturday 11 AM - 1 PM
Parking-Space Supply	1,848	1,374	1,848
Demand (Occupancy Rate)	1,714 93%	1,279 93%	1,540 83%
Spaces Available (Rate)	134 7%	95 7%	308 17%

Source: STV Incorporated, 2023.

THE FUTURE WITH THE PROPOSED ACTIONS (WITH ACTION CONDITIONS)

The Proposed Project is estimated to provide a total of 15 on-site parking spaces along the proposed driveway that would be dedicated for staff and visitors of the on-site community facility uses. All other residents, workers, and shoppers for the Proposed Project are anticipated to use available on-street parking.

Parking demand generated by the affordable residential and senior housing component of the Proposed Project was forecasted based on US Census ACS data for Kings County Census Tract 820, which includes several six- and eight-story residential buildings with no off-street parking provisions, which is comparable to the Proposed Project. The average household vehicle ownership for these census tracts is 0.29 vehicles per household and has been used for estimating the Proposed Project's residential parking demand. Parking demand generated from all other development uses has been derived from the forecasts of daily auto trips from these uses.

Currently, on-site parking is provided for the staff of the two existing homeless shelters. The Proposed Project will not provide on-site parking for the shelter staff; therefore, these vehicles have also been added to the on-street parking demand.

Overall, the Proposed Project is projected to generate an on-street parking demand of 244, 194, and 190 parking spaces during the weekday AM, midday, and Saturday midday peak periods, respectively. This on-street parking demand would result in a parking shortfall of 110 spaces during the early weekday AM period and 99 spaces during the weekday midday period (see Table 14-27, "2031 With Action On-Street Parking Supply and Demand").[6] Given that the parking demand would exceed the available on-street parking supply, the Proposed Project would result in a significant parking shortfall; however, a significant parking shortfall would not be considered a significant adverse environmental impact. Potential mitigation measures are described in Chapter 23, "Mitigation Measures."

Alternative travel modes via bus and subway are available to encourage non-auto travel to and from the Project Site and reduce the parking demand. Additionally, residents and workers may choose to use available on-street parking beyond a quarter-mile radius of the Proposed Project. Alternatively, some residents and employees may choose to pay to park in the Kings County Hospital parking garage located at the west of Albany Avenue which could provide up to 20 available paid parking spaces based on discussion with the garage operator.

Additionally, the household auto ownership for the Proposed Project may be lower than that estimated, as evident by the findings from the representative senior housing facility surveyed at 1505 St. Marks

[6] Parking supply in the weekday PM period would be expected to resemble parking supply Saturday midday, and the Project-generated parking demand in the weekday PM period is anticipated to be lower than Saturday midday. Therefore, weekday PM parking shortfall is unlikely, though if a parking shortfall were to occur in the weekday PM period, it would be expected to be less than the weekday AM and midday periods.

Avenue in Brooklyn. Consequently, the on-street parking demand may be lower, which would reduce the on-street parking shortfall.

Table 14-27: 2031 With Action On-Street Parking Supply and Demand

Parking Parameter	Weekday 4-6 AM	Weekday 11 AM - 1 PM	Saturday 11 AM - 1 PM
Parking-Space Supply	1,848	1,374	1,848
Demand	1,958	1,473	1,730
(Occupancy Rate)	106%	107%	94%
Spaces Available	-110	-99	118
(Rate)	-6%	-7%	6%

Source: STV Incorporated, 2023.